

Applicant: Shifeng Jiang (41936329)

Program: Ph.D. in Genome Science and Technology (VGDPHD-LE)

Entry period: September 2024

Application comments:

No comments available

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Application form
Resume
Statement of Interest/Intent
Transcripts & Diplomas – Unofficial
eReference (eRef) Responses
Reference Letter

JIANG, SHIFENG ()

41936329

Degree Selection

Submission Date: 29/Nov/2023

Campus	Program (VGDPHD-LE)	Academic Year	Term	Term Start
Vancouver	Ph.D. in Genome Science and Technology	2024-2025	W1	Sep 2024

Source of Interest

How did you find out about UBC?
News Report

Personal and Contact Details

Student Number		Family Name (Surname)		Preferred Name
41936329		JIANG		
Title	Given Name	Middle Name	Former Family Name (Surname)	
	SHIFENG			

Date of Birth	Gender	Country of Birth	Country of Current Citizenship
31/Dec/1998	Male	China	China
Dual Citizenship	Primary Spoken Language	Other Spoken Language	Visa Type
	Chinese		International Student

Address Line (1 & 2)			
ROOM 201, DORMITORY 87, NO.800 DONGCHUAN ROAD			
City	Province, State or Region	Postal or Zip Code	Country
SHANGHAI		200240	China

Day Telephone Number	Evening Telephone Number	Email Address
8613918045848		jack-carpenter@sjtu.edu.cn

Do you identify yourself as an Aboriginal person of Canada?
Do you identify yourself as a Racialized person?
Yes

Academic History

- Applicant indicates that they have only attended post-secondary institution(s) other than UBC.

Shanghai Jiaotong University

Institution Country:	China
Start Date:	01/Sep/2021
End Date (or Expected End):	30/Jun/2024
Program of Study:	Biology
Credential Status	In Progress
Expected Conferred Date:	30/Jun/2024
Expected Credential:	
Awards & Honours received with this degree:	1. A-level Academic Scholarship for Enrolled Students of Master's Program, SJTU (Sep 2021) 2. Academic Scholarship of Academic Year 2021-2022 for Students of Master's Program, SJTU (Nov 2022) 3. National Academic Scholarship Nomination of Academic Year 2022-2023, SJTU (Oct 2023) 4. Academic Scholarship of Academic Year 2022-2023 for Students of Master's Program, SJTU (Nov 2023) 5. Renke Scholarship of Academic Year 2022-2023 for Scientific Research and Academic Excellence, SJTU (Nov 2023)
Required to withdraw:	No
Self Reported GPA:	
Used for Basis of Admission to UBC:	Yes

GPA Calculations Summary

Calculation Name	Purpose	Date of Calculation	Minimum GPA Req'd	GPA Calculation	GPA Rank	Meets Progm Requirements	Meets UBC Requirements	First Class Standing?
Biology	Admissions	01/12/2023		3.85		Yes	Yes	Yes

Shanghai Jiaotong University

Institution Country:	China
Start Date:	01/Sep/2017
End Date (or Expected End):	30/Jun/2021
Program of Study:	Bioengineering
Credential Status	Conferred / Complete
Date Conferred:	30/Jun/2021
Credential Received:	Bachelor's
Awards & Honours received with this degree:	1.Shanghai Jiao Tong University C-level Scholarship of Academic Year 2018-2019 (Sep 2019) 2.Team Gold Medal, Best New Application Nomination in 2019 iGEM Competition (Nov 2019) 3.Rongchang Scholarship Nomination Award of year 2020, SJTU (Jan 2021) 4.Outstanding Graduate of the Class of 2021, SJTU (Jun 2021)
Required to withdraw:	No
Self Reported GPA:	
Used for Basis of Admission to UBC:	No

- No **UBC** academic history found for this student number (41936329)

Self-Reported Test Scores

IELTS

Candidate ID	Candidate no	TRF number	Date of Writing
310109199812312015	024614	23CN024614JIAS004A	20/May/2023
Total Band Score	7.5		
Listening	8.5		
Reading	8.5		
Writing	6.5		
Speaking	7		

Experience & Interests

Standard Questions

Areas of Interest

Faculty Members

Tokuriki, Nobuhiko

Please provide a brief statement of your academic and/or professional goals and how these align with this graduate program.

Please describe any research and/or work experience (including publications, etc.) you've undertaken that is relevant to your proposed field of study.

Research Experience

1. Enzyme Mining via Combination of Searching Strategy and AI Models

Lab: Liang Hong Lab at Shanghai Jiao Tong University (Jun 2023 -)

Description: Exploring protein mining methodology based on multi-dimensional strategies (Research paper in preparation).

2. In silico Construction of FIX-FVIII-FX tenase Complex Structure (Oct 2022 - Nov 2023) (Paper 1 in Section 'Publications')

Lab: Qin Xu Group at Shanghai Jiao Tong University (Oct 2022- Nov 2023)

Description:

Building the model of the critical ternary complex structure in intrinsic coagulation pathway.

Established structural foundation for drug development and wet lab / clinical phenomenon regarding hemophilia A and B.

3. Construction of FIX-FVIII Complex and Investigation of Thrombus Formation Induced by Novel Functional Mutations (Feb 2023 - Jun 2023) (Paper 2 in Section 'Publications')

Lab: Qin Xu Group in collaboration with Wenman Wu Group at Ruijin Hospital, Shanghai

Description:

Explored FIXa-FVIIIa interaction within tenase complex, investigating the impact of the E340K mutation.

Constructed a new binary complex structure, explaining the molecular basis for increased procoagulant activity.

4. Exploration of the Structure and Function of a New Clinically Identified FIX Mutation (Nov 2022 - Mar 2023) (Paper 5 in Section 'Publications')

Lab: Dongqing Wei Lab in collaboration with Wenman Wu Group at Ruijin Hospital, Shanghai

Description:

Revealed molecular mechanism via MD simulations to explain experimental observations of the mutant G413V.

Explored structural and functional consequences of the mutation for clinical findings.

5. Investigation of Platelet Formation Defects Caused by GATA1 Protein Variant G229D (Nov 2022 - May 2023) (Paper 3 in Section 'Publications')

Lab: Qin Xu Group in collaboration with Qiulan Ding Group at Ruijin Hospital, Shanghai

Description:

Explored G229D mutation of GATA1 that weakens GATA1-DNA interaction via molecular dynamics simulations.

Provided molecular explanation for platelet formation defects and coagulation disorders caused by GATA1 variant.

6. Investigation of MYC2 Protein Phosphorylation in the Arabidopsis Hippo Signaling Pathway (Oct 2022 - Apr 2023) (Paper 4 in Section 'Publications')

Lab: Qin Xu Group in collaboration with Qingqiu Gong Group at Shanghai Jiao Tong University

Description:

Revealed weakening effect of phosphorylation on MYC2-DNA interaction via molecular dynamics simulations.

Provided molecular explanation for the termination of jasmonate signaling pathway due to MYC2 phosphorylation.

7. Investigation of Antithrombotic Antibodies Targeting the Binding Site of FIXa-FVIIIa Complex (Oct 2020 - Mar 2021) (Paper 6 in Section 'Publications')

Lab: Qin Xu Group in collaboration with Junling Liu Group at School of Medicine, Shanghai Jiao Tong University

Description:

Identified concentrated antibody binding sites that hinders FIXa's interaction with FVIIIa, which was validated by wet lab results.

8. Wet lab: 2019 iGEM (International Genetically Engineered Machine) Competition

Lab: Gang Ma Lab at Shanghai Jiao Tong University (Jan 2019 – Nov 2019)

Description:

Designed gene circuits capable of detecting and documenting CRISPR off-targets based on luciferase and red fluorescent protein, respectively.

Developed a bio-storage prototype that was able to both encode and decode 20-byte information.

Publications

Due to word limit, related publications can be seen in my CV.

Program-Specific Questions

Briefly discuss your background in life sciences, including academic, work or other experiences that may assist the admissions committee. Please limit your response to one page.	<p>I was an undergraduate student majoring in bioengineering at Shanghai Jiao Tong University. Throughout my four years of study, I received comprehensive academic training in both theoretical knowledge and practical skills. I further refined my wet lab experimental skills and overall scientific research abilities during a 10-month iGEM competition project, designing gene circuits to detect and store the off-target phenomenon of the CRISPR-Cas system. After obtaining my bachelor's degree, I joined Dongqing Wei Lab, utilizing computational methods, including Molecular Dynamics (MD) simulations, to unveil the structural basis of macromolecular systems. I developed my in silico skills during this period. In the summer of 2023, I participated in summer lab of Liang Hong Lab, exploring state-of-the-art methodologies for biological research, including AI techniques. In summary, my research experiences encompass various aspects, contributing to the enhancement of both my wet and dry lab skills.</p>
Briefly discuss your background in quantitative sciences (math, statistics, computer science, engineering, physics) including academic, work or other experiences that may assist the admissions committee. Please limit your response to one page.	<p>I received comprehensive academic training in quantitative sciences during my undergraduate studies. In the first two years, I took systematic courses in math, physics, and chemistry, laying the theoretical foundation for both my biological research and major courses. I also refined my programming skills through Python programming courses and bioinformatics classes. As an undergraduate student majoring in bioengineering, I underwent training in chemical engineering as well as biochemical manufacturing processes, which encompass both experimental and theoretical aspects. My computational skills were further developed during my master's studies, where I applied a comprehensive bioinformatic and computational methodology to my research. I took advanced courses in biological statistics and bioinformatics in the first year of my master's program. Particularly, in my ongoing project at Liang Hong Lab, I enhanced my computer science skills and knowledge.</p>

Additional Questions

Standard Questions

Please discuss any other information you feel would be important to the Admission Committee in evaluating your application. If you feel that your credentials and any other information you have already provided on this form or will be submitting in support of your application represents you fairly, you should feel no obligation to write anything further here.

I am a Shanghai citizen born and bred. From my childhood, I always took pleasure in helping others. During senior high school, I dreamed to be a doctor, as I found it meaningful to save lives with my knowledge and clinical skills. However, the Chinese College Entrance Examination set high requirements for top medical schools and I fell short of their entry score. Hence, I applied for a bioengineering major as my undergraduate study and aimed to contribute to the health of all mankind by synthetic biology. After three years of wet lab training, I realized that biological research should be driven by multidisciplinary efforts. Therefore, I went for the master's program of computational biology and mainly focused on the application of in silico tools for medical discoveries.

I enjoy diversity in scientific research. During my master's studies, I further developed my capability of interpretation and communication through several experiences of collaboration with researchers of various backgrounds, including clinical practitioners, medical researchers, and botanists. When I first met my collaborators at Ruijin Hospital in Shanghai, the physicians had difficulty in understanding my computational discovery. I managed to interpret my data for them with my knowledge of biology. Through my efforts, the following collaboration turned out to be a success. I enjoy working with people of different backgrounds in my collaboration, as I can gain novel insight through their perspectives. My recent collaboration with my teammates of CS background at Hong Lab not only accelerated discoveries in protein mining but also improved my coding ability. In summary, I think collaboration is crucial to scientific research, and I can make progress every time I communicate with different researchers.

As a first generation college student, I treasure the opportunity to pursue higher education. Obtaining a PhD is critical to my goal of improving people's health on an overall basis. From my perspective, the importance lies equally in the experience during the whole process of PhD education as well as the degree itself. Firstly, pursuing a PhD degree is a fascinating journey with comprehensive training, which involves gaining capabilities in collaboration, communication, logic, and critical thinking. These are the very qualities that turn a scientific worker into a creative scientist. Secondly, the experience is also a journey of mental growth. Admittedly, pursuing PhD will never be smooth. However, it is the obstacles and challenges that shape my mindset as well as life philosophy, and prepare me for the future academic researches.

In addition to my academic dream, I am a history and culture amateur. I am very interested in cultural differences, and the ideas and values of various cultures always fascinate me. I have been living in Shanghai, an international metropolis, for 25 years. Experiences with westerners keep me wondering how western culture shapes their mind and how it comes to influence the world by science and law. I would be delighted if I have the opportunity to go to a western country, experience its culture and find out the answers.

Referee 1

Name	Qin Xu
Job Title / Occupation	Professor
Institution / Company / Organization	SHANGHAI JIAO TONG UNIVERSITY
Type of Reference	Academic
Address	YEJIEQUAN BUILDING, NO.800, DONGCHUAN ROAD SHANGHAI China 200240
Referee Email / Website	xuqin523@sjtu.edu.cn
Telephone #	+8602134204185
Notes to Referees	

Referee 2

Name	Dongqing Wei
Job Title / Occupation	Professor
Institution / Company / Organization	SHANGHAI JIAO TONG UNIVERSITY
Type of Reference	Academic
Address	YEJIEQUAN BUILDING, NO.800, DONGCHUAN ROAD SHANGHAI China 200240
Referee Email / Website	dqwei@sjtu.edu.cn
Telephone #	+8602134204573
Notes to Referees	

Referee 3

Name	Gang Ma
Job Title / Occupation	Professor
Institution / Company / Organization	SHANGHAI JIAO TONG UNIVERSITY
Type of Reference	Academic
Address	BUILDING 1, SCHOOL OF LIFE SCIENCES AND BIOTECHNOLOGY, NO. 800, DONGCHUAN ROADSHANGHAI China 200240
Referee Email / Website	magang@sjtu.edu.cn
Telephone #	+8602134207232
Notes to Referees	

Shifeng Jiang

+86-13918045848 | jack-carpenter@sjtu.edu.cn
Shanghai Jiao Tong University

EDUCATION

Master: Biology, Shanghai Jiao Tong University

Sep 2021 - Jun 2024

School of Life Sciences and Biotechnology GPA: 3.85 / 4.0

- Advisor: Associate Prof. Qin Xu
- Field of Research: Computational Structural Biology
- Main Curriculum: Statistical Methods in Data Science, Biology Mathematics, Structural Bioinformatics, Introduction to Computational Biology

Bachelor: Bioengineering, Shanghai Jiao Tong University

Sep 2017 - Jun 2021

- School of Life Sciences and Biotechnology (Ranking: 5 / 25 of major)
- Curriculum
 - Fundamentals of biology: Biochemistry, Microbiology, Molecular Biology, Cell biology, Genetics
 - Bioinformatics: Applied Bioinformatics, Biostatistics and Mathematical Modeling
 - Main Curriculum: Statistical Methods in Data Science, Biology Mathematics, Structural Bioinformatics, Introduction to Computational Biology

RESEARCH EXPERIENCE

Section 1, Dry lab: Enzyme Mining via Combination of Searching Strategy and AI Models

Lab: Liang Hong Lab at Shanghai Jiao Tong University (Jun 2023 -)

- Exploring protein mining methodology based on multi-dimensional strategies (**Research paper in preparation**).

Section 2, Dry lab: Investigation of the Functional Impact of Coagulation Factor Mutations

• *In silico* Construction of FIX-FVIII-FX tenase Complex Structure (Oct 2022 - Nov 2023)

- Building the model of the critical ternary complex structure in intrinsic coagulation pathway.
- Established structural foundation for drug development and wet lab / clinical phenomenon regarding hemophilia A and B.

• Construction of FIX-FVIII Complex and Investigation of Thrombus Formation Induced by Novel Functional Mutations (Feb 2023 - Jun 2023)

Lab: Qin Xu Group in collaboration with Wenman Wu Group at Ruijin Hospital, Shanghai

- Explored FIXa-FVIIIa interaction within tenase complex, investigating the impact of the E340K mutation.
- Constructed a new binary complex structure, explaining the molecular basis for increased procoagulant activity.

• Exploration of the Structure and Function of a New Clinically Identified FIX Mutation (Nov 2022 - Mar 2023)

Lab: Dongqing Wei Lab in collaboration with Wenman Wu Group at Ruijin Hospital, Shanghai

- Revealed molecular mechanism via MD simulations to explain experimental observations of the mutant G413V.
- Explored structural and functional consequences of the mutation for clinical findings.

Section 3, Dry lab: Investigation of DNA-Binding Protein Structure and Function

• Investigation of Platelet Formation Defects Caused by GATA1 Protein Variant G229D (Nov 2022 - May 2023)

Lab: Qin Xu Group in collaboration with Qiulan Ding Group at Ruijin Hospital, Shanghai

- Explored G229D mutation of GATA1 that weakens GATA1-DNA interaction via molecular dynamics simulations.
- Provided molecular explanation for platelet formation defects and coagulation disorders caused by GATA1 variant.

• Investigation of MYC2 Protein Phosphorylation in the Arabidopsis Hippo Signaling Pathway (Oct 2022 - Apr 2023)

Lab: Qin Xu Group in collaboration with Qingqiu Gong Group at Shanghai Jiao Tong University

- Revealed weakening effect of phosphorylation on MYC2-DNA interaction via molecular dynamics simulations.
- Provided molecular explanation for the termination of jasmonate signaling pathway due to MYC2 phosphorylation.

Section 4, Dry lab: Research on Antibody Structure and Function

● Investigation of Antithrombotic Antibodies Targeting the Binding Site of FIXa-FVIIIa Complex (Oct 2020 - Mar 2021)

Lab: Qin Xu Group in collaboration with Junling Liu Group at School of Medicine, Shanghai Jiao Tong University

- Identified concentrated antibody binding sites that hinders FIXa's interaction with FVIIIa, which was validated by wet lab results.

Section 5, Wet lab: 2019 iGEM (International Genetically Engineered Machine) Competition

Lab: Gang Ma Lab at Shanghai Jiao Tong University (Jan 2019 - Nov 2019)

- Designed gene circuits capable of detecting and documenting CRISPR off-targets based on luciferase and red fluorescent protein, respectively.
- Developed a bio-storage prototype that was able to both encode and decode 20-byte information.

PUBLICATIONS

1. **Jiang, S.**, Xu, Q., Wu, W., Wei, D., & Wang, X. (2023). Construction of a ternary protein complex structure of intrinsic coagulation pathway factors. *Blood*. (Under Review)
2. Wu, W., Wang, R., Xu, Q., Wang, G., **Jiang, S.**, Lou, C., Wu, X., Shao, Y., Lu, Y., Liu, Y., Xu, G., Ding, Q., Hu, X., Wang, X., & Dai, J. (2023). Thrombosis caused by a Factor IX gain-of-function mutation (Factor IX Shanghai II). *Nature Medicine*. (In Preparation).
3. Ding, B., Mao, Y., Li, Y., Xin, M., **Jiang, S.**, Hu, X., Xu, Q., Ding, Q., & Wang, X. (2023). A novel GATA1 variant p.G229D causing the defect of procoagulant platelet formation. *Thrombosis Research*. (Manuscript Revised and Submitted after Peer Review).
4. Zhang, P., Wang, G., Wang, Q., Zhou, J., Luo, L., **Jiang, S.**, Mu, J., Zhai, C., Xu, Q., Wu, S., & Gong, Q. (2023). The plant Hippo orthologue SIK1 phosphorylates MYC2 to terminate jasmonate signaling. *Proceedings of the National Academy of Sciences of the United States of America*. (Under Review).
5. Wang, R.*, **Jiang, S.***, Wang, X., Wei, D., Xu, Q., & Wu, W. (2023). Structural and functional exploration of three newly identified coagulation factor IX mutations in Chinese hemophilia B patients. *International Journal of Hematology*, 118(2):201-209.
6. Sun, T.*, **Jiang, S.***, Xu, Q., Liu, J., Dang, S., & Fan, X. (2021). A novel antithrombotic antibody targeting the binding sites of the coagulation factor FIXa-FVIIIa complex. *Journal of Shanghai Jiaotong University. Medical Science*, 41(9), 1133-1139.

ACHIEVEMENTS

- Shanghai Jiao Tong University C-level Scholarship of Academic Year 2018-2019 (Sep 2019)
- Team Gold Medal, Best New Application Nomination in 2019 iGEM Competition (Nov 2019)
- Rongchang Scholarship Nomination Award of year 2020, SJTU (Jan 2021)
- Outstanding Graduate of the Class of 2021, SJTU (Jun 2021)
- A-level Academic Scholarship for Enrolled Students of Master's Program, SJTU (Sep 2021)
- Academic Scholarship of Academic Year 2021-2022 for Students of Master's Program, SJTU (Nov 2022)
- National Academic Scholarship Nomination of Academic Year 2022-2023, SJTU (Oct 2023)
- Academic Scholarship of Academic Year 2022-2023 for Students of Master's Program, SJTU (Nov 2023)
- Renke Scholarship of Academic Year 2022-2023 for Scientific Research and Academic Excellence, SJTU (Nov 2023)

EXTRACURRICULAR ACTIVITIES

- Social Survey and Practice: Survey of waste sorting practices in different cities (July - Aug 2023)
- Standardized Medical Residency Training Examination volunteer (Jun - Sep 2021)
- Social Survey and Practice: Visits to biomedical industry companies (July - Aug 2019)
- Social Survey and Practice: Survey of sewage treatment and optimization in China (July - Aug 2018)

SKILLS

● Dry Lab:

- Computer programming: Python, Bash, R language basics, basics of deep learning and other AI techniques
- Molecular dynamics simulations: AMBER and GROMACS basics
- Molecular Docking: ClusPro, AutoDock Vina, ZDOCK, etc.
- Molecular visualization: PyMOL, MOE (Molecular Operating Environment)

● Wet Lab:

- Molecular cloning, Protein expression and purification
- Fermentation techniques of microorganisms, Cell culture techniques
- Basics of chemical engineering

Statement of Intent

Shifeng Jiang

As a current master's student in computational biology, I am convinced of the invaluable contributions that *in silico* methods can make to the field of biology. Having spent six years at Shanghai Jiao Tong University, my academic journey has been marked by various research experiences. They have crystallized my academic interest: unraveling the rules of protein evolution and utilizing the information for protein engineering. Pursuing graduate studies at the University of British Columbia will be an indispensable experience to my academic career.

Through my past experiences, I have gained skills in both dry and wet labs. On the *in silico* side, my master research projects studying large protein complexes and protein-nucleotide complexes have not only equipped me with expertise in molecular dynamics (MD) simulation and structural analysis of biomolecular systems, but also advanced my programming skills. On the wet lab side, my undergraduate studies in bioengineering, coupled with my experience as a gold medal winner in the 2019 iGEM competition, have honed my foundational expertise such as molecular cloning, protein expression and purification, fermentation.

My passion for protein engineering was kindled during a collaborative project in my senior undergraduate year. An anti-thrombotic antibody was discovered by wet lab with an unknown mechanism. Through computational investigations I revealed that the antibody binds to a specific region on coagulation factor IX, disrupting its interaction with factor VIII. These computational findings not only provided essential insights but also furnished robust evidence for subsequent biochemical research. Seeing how combination of wet and dry labs could help the development of antibodies, I was fascinated by the idea that I could engineer proteins rather than elucidate their mechanisms.

In early 2022, I embarked on an attempt to engineer antibodies for cancer therapy using traditional structure-based *in silico* methods. Regrettably, the wet-lab validation of these designed antibodies proved unsuccessful. I realized that protein design incorporates many perspectives with a combination of functional, structural, evolutionary information stemming from various pharmaceutical and chemical desires. Conventional protein engineering techniques are non-generative methods that rely solely on structural information. They often overlook crucial evolutionary information, such as the relationship between sequence and fitness. They shrink the vast search space of potential proteins and result in a lack of efficiency and efficacy for protein design. Based on this experience, I started thinking about a critical question that applies to all proteins: How do proteins evolve to form particular fitness for function and stability? Answering this question can establish a solid theoretical foundation for the field of protein engineering.

The advent of artificial intelligence has a revolutionary impact on scientific research, particularly evident in the last five years through significant AI applications in the field of biology. In search of cutting-edge protein engineering methodologies, this past summer, I participated in Professor Liang Hong's 'AI for Science' program at my university, focusing on a multi-dimensional protein mining strategy including the application of AI models. The summer lab significantly altered my understanding of the nature of proteins: proteins are data with multi-dimensional information. As the project unfolded, I discovered the synergies between biological and computational knowledge. My contribution to the

strategy proposal and intensive benchmark work laid a solid foundation for our teamwork and finally brought us novel sequences via our pipeline. Preliminary wet lab validation turned out to be promising. Based on these results, we are preparing the manuscript of an article, of which I am a co-first author. This attempt of AI application left me exhilarated, as I witnessed the remarkable acceleration of biological research by AI.

The experiences throughout my academic journey have gradually shaped my future plan for graduate research. It centers on the engineering proteins, particularly enzymes or antibodies, by combining wet and dry lab experiments. My objective is to establish a comprehensive paradigm for protein engineering. The primary issue with current protein design methods revolves around the lack of a comprehensive engineering strategy, which can be dissected from two angles. Firstly, existing AI-assisted engineering approaches only consider a limited subset of protein characteristics, necessitating the development of AI models better suited to capturing the features of proteins and interactions. Secondly, the dearth of real-world biological data hampers a holistic understanding of therapeutic proteins. My proposed solution involves constructing new protein-tailored AI models as well as feeding and validating them with data from wet lab experiments. My prospective graduate research plan involves two phases: adapting existing models for protein engineering and independently creating new models. Concurrently, individual or collaborative wet lab works with multi-dimensional biological data, especially evolutionary information, produced by high-throughput experiments can boost the iteration of protein engineering based on the optimization desire.

On the road to my goal, the Genome Science and Technology Ph.D. program is the key. It includes a wide range of research fields and numerous possibilities of multi-disciplinary researches, which supports my interest in protein engineering with a combination of various techniques. Furthermore, program is a cradle of future leaders in both field of biology. It not only provides students with outstanding education and academic training, but also stimulates students' sense of responsibility and charisma. The program can offer me precious opportunities to learn from top-notch experts in the field. The research faculty that I would most like to work with is Professor Nobuhiko Tokuriki. He is one of the excellent researchers focusing on the evolutionary dynamics of proteins. His lab's application of high-throughput techniques to reveal the evolutionary pathways of proteins can provide me with a comprehensive understanding of protein engineering. Particularly, Professor Tokuriki's recent collaboration of AI-driven protein engineering perfectly matches my academic prospect. In summary, the Genome Science and Technology Ph.D. program at UBC can grant me an invaluable opportunity to grow both academically and personally.

My future career aspirations lie in academia. I anticipate gaining a clearer perspective on the field and my direction during my graduate studies. After graduation, I plan to pursue a postdoctoral position, where I can initiate independent researches to gain insight into issues and emerging trends. My passion for education also drives me to lead the future generations and inspire them to contribute to the scientific community.

UNDERGRADUATE TRANSCRIPT



NAME

STUID

COLLEGE

Jiang Shifeng
517111910232
School of Life Sciences &
Biotechnology

GENDER

CLASS

MAJOR

Male
F1708003
Bioengineering

ACADEMIC YEAR:2017-2018

CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE	CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE
BI001	Introduction to Life Science	2	85	1	major	EN065	College English V	3	90	2	major
BI140	Introduction to Science in IPLE	2	84	1	major	MA079	Calculus II	4	71	2	major
CA008	Inorganic and Analytic Chemistry Lab.	2	78	1	major	MA119	Probability and Statistics	3	86	2	major
CA013	Inorganic and Analytic Chemistry	4	75	1	major	ME904	Visualization Thinking and Engineering Language	2	95	2	major
CA140	Lecture of Frontier in IPLE	1	90	1	major	PE002	Physical Education II	1	93	2	major
EN064	College English IV	3	83	1	major	PH003	Physics(B) I	3	65	2	major
MA077	Linear Algebra	3	86	1	major	PH028	Physics Lab. I	1	82	2	major
MA078	Calculus I	4	67	1	major	PI913	The History of Western Philosophy	3	85	2	major
PE001	Physical Education I	1	94	1	major	SP227	Walk into Mysterious Tomato (Solanum lycopersisum) World	2	93	2	major
TH000	Cultivation of Ethics and Fundamentals of Law	3	90	1	major	TH004	Military Theory	1	81	2	major
TH020	Circumstance and Policy	0.5	B+	1	major	TH010	Military Training	3	P	2	major
BI141	Introduction to Biology	2	67	2	major	TH020	Circumstance and Policy	0.5	A-	2	major
CA018	Organic Chemistry	4	77	2	major	TH021	Modern Chinese History	2	86	2	major
CA023	Organic Chemistry Lab.	2	85	2	major	XP004	Social Cognitive Practice in the New Era	2	P	2	major
CH906	Appreciating and Writing of Chinese Classical Poems	3	83	2	major						

ACADEMIC YEAR:2018-2019

CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE	CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE
BI108	Introductory Biology Laboratory	1	82	1	major	BI211	Microbiology	3	96	2	major
BI278	Field Practice in Biology	1	P	1	major	BI291	Bioengineering I	2	93	2	major
BI283	Biochemistry	4	92	1	major	BI295	Molecular Biology	2	97	2	major
BI284	Biochemistry Lab.	1.5	86	1	major	BI310	Genetics	2	85	2	major
BI292	Cell Biology	2	93	1	major	BI313	Bioengineering I Lab.	1	93	2	major
CS902	Thinking and Approach of Programming	3	86	1	major	BI356	Microbiology Lab.	1.5	83	2	major
LO901	Reasoning Logic and Developing of Thinking Capacities	2	87	1	major	BI902	Bioethics	2	88	2	major
PE003	Physical Education III	1	91	1	major	PE004	Physical Education IV	1	89	2	major
PH004	University Physics (B) II	3	82	1	major	T080PRP34013	PRP(T080PRP34013)	2	B	2	major
PH029	University Physics Experiments II	1	85	1	major	TH020	Circumstance and Policy	0.5	A	2	major
TH007	Basic Theory of Marxism	3	91	1	major	TH029	Introduction to Mao Zedong's Thoughts and Theoretical System of Socialism with Chinese Characteristics	3	91	2	major
TH020	Circumstance and Policy	0.5	B+	1	major	BI293	Internship and Innovation of Science and Technology I	2.0	P	3	major

ACADEMIC YEAR:2019-2020

CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE	CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE
BI323	Internship and Innovation of Science and Technology II	1.0	P	1	major	BI487	Protein and Enzyme Engineering	2.0	96.00	1	major
BI437	Applied Bioinformatics	2.0	95.00	1	major	BI917	Brain and Everyday Behaviors	2	90	1	major
BI467	Bioengineering II	2.0	85	1	major	BI326	Cell Engineering	2.0	95	2	major
BI478	Genetic Engineering	2.0	95.50	1	major	BI444	Separation Engineering of Biochemistry	2.0	91	2	major
BI479	Bioengineering II	1.0	94	1	major	BI461	Biostatistics and Mathematical Modeling	3.0	79	2	major
BI480	Genetic Engineering Experiments	1.0	92	1	major	BI484	Bioenergy	2.0	88	2	major
BI483	Microbial Resources and Utilization	2.0	A+	1	major	BI485	Biopharmaceutical Engineering	2.0	89	2	major
BI486	Bioreaction and Bioprocess Engineering	2.0	96	1	major	BI469	Professional Practice	2.0	B+	3	major

ACADEMIC YEAR:2020-2021

CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE	CODE	COURSES	CREDIT	GRAD E CODE	SEMES TER	TYPE
BI364	Internship and Innovation of Science and Technology III	1.0	P	1	major	BS449	Undergraduate Project (Thesis)	12.0	B+	2	major
BI402	Comprehensive Experiment of Bioengineering	2.0	A	1	major						

NOTE1-MARK"△"Means the Course Failed NOTE2-MARK"↗"Means Credit
Transfer Course NOTE3-P(Pass)F(Fail) NOTE4-MARK "W"Means The course has been
withdrawn NOTE5-The sheet should be stamped to be official
Semester 1 means fall semester Semester 2 means spring semester
Semester 3 means summer semester

Registrar:
Registration & Students'Affairs Center
Shanghai Jiao Tong University
<http://jwc.sjtu.edu.cn>
2023/09/02



上海交通大学

本科生毕业证书

学生 蒋时枫, 男, 学号 517111910232, 1998 年 12 月 31 日生, 于 2017 年 09 月至 2021 年 06 月 在我校 生物工程(基地班) 专业 4 年制 普通全日制本 科学学习, 修完教学计划规定的全部课程, 成绩合格, 准 予毕业。

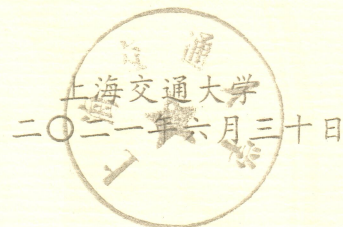


校长:

林忠钦

证书编号: 102481202105001864

证书查询网址: <https://www.cher.com.cn>



DIPLOMA

This is to certify that Jiang Shifeng, male, 517111910232, born on December 31, 1998, studied the four-year undergraduate program of Bioengineering in Shanghai Jiao Tong University from September 2017 to June 2021, and, having completed all the courses with qualified academic standing is hereby duly graduated.

President: Ding Kui Ling

University: Shanghai Jiao Tong University

Certificate No. 102481202105001864

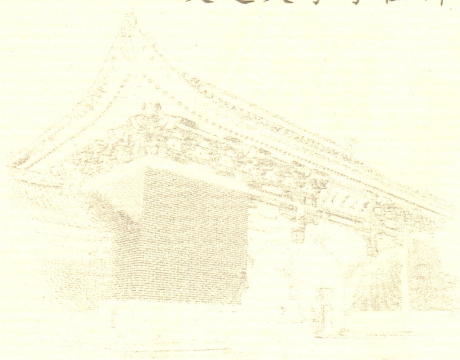
Date: June 30, 2021



上海交通大学

学士学位证书

蒋时枫, 男, 1998年12月31日生, 完成了生命科学
技术学院生物工程(基地班)学士学位培养计划, 经上海
交通大学学位评定委员会审定, 授予工学学士学位。

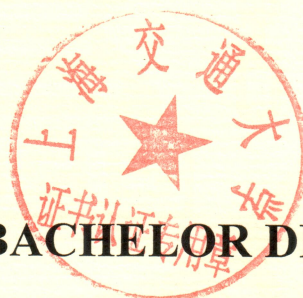


校 长

学位评定委员会主席

林忠钦

二〇二一年六月三十日



CERTIFICATE OF BACHELOR DEGREE

This is to certify that Jiang Shifeng, male, born on December 31, 1998, studied the four-year undergraduate program of Bioengineering in the School of Life Sciences & Biotechnology, was graduated and is conferred the Bachelor of Engineering in accordance with the Regulations Concerning the Academic Degrees of the People's Republic of China after due examinations.

Ding Kui Ling

Chairman of the Academic Degrees Appraisal Committee

Shanghai Jiao Tong University

Certificate No. 1024842021101293

Date: June 30, 2021



Name: Jiang Shifeng
Nationality: The People's Republic of China
Student ID: 121080910023
Study Program: Academic Master
School: School of Life Sciences and Biotechnology
Major: Biology

Gender: Male
Date of Birth: Dec. 31, 1998
Enrollment Date: Sept. 2021
Supervisor: Xu Qin

Remarks:

COURSE TITLE		CREDIT	GRADE	SEMESTER
☆	Microbial Ecology	2	A	2022 Spring
☆	Structural Bioinformatics	2	A	2022 Spring
☆	Statistical Methods in Data Science	2	A	2022 Spring
	Laboratory Innovation Training	3	B	2022 Spring
	Academic Lectures	1	P	2022 Spring
☆	Theory and Practice of Socialism with Chinese Characteristics in the New Era	2	A	2022 Spring
☆	Introduction to Dialectics of Nature	1	A	2022 Spring
☆	Biology Mathematics I	3	A-	2022 Spring
☆	Guidelines for Scientific Research	2	A-	2021 Fall
☆	The Regulation of Animals and Plants Gene Expression	2	B+	2021 Fall
	Development of Modern Life Sciences	3	B	2021 Fall
	Biosafety	2	A	2021 Fall
	Introduction to Computational Biology	2	A+	2021 Fall
☆	English for Academic Purposes	2	A	2021 Fall
☆	Scientific Writing, Integrity and Ethics	1	A	2021 Fall
----- E N D -----				

* Courses marked with ☆ are used for calculating GPA while those with are free elective.

** The Transcript should be stamped to be official.

*** Refer to the back page for descriptions.

Dean: *Gui Lin*

Graduate School
Shanghai Jiao Tong University

说 明

学期：

上海交通大学每学年开始于9月，结束于次年8月。2011年（含）起每学年包含两个标准学期（秋季学期、春季学期）和一个夏季学期，其中标准学期有教学周16周，夏季学期有4周。2011年前每学年包含两个学期，各有教学周18周。

学分与学时：

2011年（含）起，16学时 = 1学分；2011年前，18学时 = 1学分。

考核与记分方式：

1) 2016年9月及以后入学的研究生课程考核成绩采用A+至F的十一级记分制或者“通过/不通过”，具体参照附表。在此之前入学的研究生课程成绩采用原记分方式，同时由学校出具的中英文成绩单中成绩绩点的计算方法也采用原有方式，具体参照附表。

2) 平均绩点 = $\Sigma(\text{绩点} \cdot \text{学分}) / \Sigma \text{学分}$ ，记入平均绩点统计的课程清单由各学科在制定培养方案时确定。

EXPLANATORY NOTES

Academic Calendar:

The academic calendar of Shanghai Jiao Tong University operates on the semester system, which runs from September to next August. One academic year contains two standard semesters (fall semester and spring semester) and one summer semester since 2011 (inclusive). The standard semester contains approximately 16 weeks of instruction, and 2 weeks of final examinations. The summer semester contains 4 weeks. Before 2011, one academic year had two semesters each with 18 weeks of instruction.

Credits and Instruction:

From the school year of 2011 (inclusive), one credit corresponds to 16 instruction hours. Before the school year of 2011, one credit corresponded to 18 instruction hours.

Grading Systems:

1) Effective for graduate students enrolled after Fall 2016 (inclusive), the grade points for graduate courses adopt the 4.0 scale. For graduate students enrolled before Fall 2016, the 3.3 scale was used. Please refer to the table below for detailed information.

2) Grade Point Average (GPA) = $\Sigma(\text{point} \cdot \text{course credit}) / \Sigma \text{course credit}$. Courses and corresponding course credits used for GPA calculation is decided by the respective schools/departments.

新记分体系（2016年秋季起） New 4.0 Scale (From Fall 2016)				原记分体系（2016年秋季前） Previous 3.3 Scale (Before Fall 2016)		
百分制	等级制 (Grade)	绩点 (Points)	说明	百分制	等级制 (Grade)	绩点 (Points)
95,100	A+	4.0	优秀 (Excellent)	96~100	A+	3.3
[90,95)	A	4.0		90~95	A	3.0
[85,90)	A-	3.7		85~89	A-	2.7
[82,85)	B+	3.3	良好 (Good)	80~84	B+	2.3
[78,82)	B	3.0		75~79	B	2.0
[75,78)	B-	2.7		70~74	B-	1.7
[71,75)	C+	2.3	一般 (Fair)	67~69	C+	1.3
[67,71)	C	2.0		63~66	C	1.0
[63,67)	C-	1.7		60~62	C-	0.7
[60,63)	D	1.0	及格 (Pass)	<60	D	0
<60	F	0	不及格 (Fail)	/	通过 (Pass)	N/A
/	P	N/A	通过 (Pass)	/	不通过 (Fail)	N/A
/	F	N/A	不通过 (Fail)	/	/	/

电子成绩单验证网址 For verification of the electronic transcript, please visit: <https://www.chsi.com.cn/cjdyz/index>



上海交通大学研究生院 (Graduate School, Shanghai Jiao Tong University) <http://www.gs.sjtu.edu.cn>

地址: 上海市东川路800号 (Address: 800 Dongchuan Road, Shanghai 200240, P.R.China) 电话 (TEL): +86-21-34205105



上海交通大学
SHANGHAI JIAO TONG UNIVERSITY

研究生院
GRADUATE SCHOOL

800 DONG CHUAN ROAD SHANGHAI 200240, THE PEOPLE'S REPUBLIC OF CHINA

在读证明

CERTIFICATE OF STUDENT STATUS

兹证明该生为上海交通大学在读研究生，详情如下：

This is to certify that the graduate student named below is enrolled in Shanghai Jiao Tong University. The details are as follows:

姓名 Name	蒋时枫 Jiang Shifeng		
学号 Student ID	121080910023	培养层次 Program	硕士 Master Program
证件类型 ID Type	身份证 ID Card	证件号码 ID Number	310109199812312015
性别 Gender	男 Male	出生日期 Date of Birth	1998/12/31
入学年月 Enrollment Date	2021/09	预计毕业日期 Expected Graduation Date	2024/06/30
学习方式 Study Mode	全日制 Full time	学籍状态 Student Status	正常 Normal
学院 School	生命科学技术学院 School of Life Sciences and Biotechnology		
专业 Major	生物学 Biology		

说明/Note: 本证明有效期至: 2024 年 02 月 18 日。This Certificate is valid till Feb. 18, 2024.

电子在读证明验证网址 For verification, please visit: <https://www.chsi.com.cn/cjdyz/index>

上海交通大学研究生院

Graduate School, Shanghai Jiao Tong University

签发日期 Issuing Date: 2023/09/12



My Training Plan

Maintaining Period: 2023/09/11 12:00 ~ 2023/09/24 20:00 Approved

Note on Maintenance: 制定完成后,请及时提交导师、院系审核; 学生、部分院系新生需导师审核通过后方可选课。Once finalized, please submit for review ASAP; for senior students and freshmen of some schools the course enrollment cannot proceed until the training plan has been approved by the supervisor. 如未指定培养方案, 培养计划无法制定。请联系所在学院教务老师 Those whose program curriculum has ...

Jiang Shifeng Academic Master

Student ID : 121080910023

School: School of Life Sciences and Biotechnology

Major: Biology

Supervisor: Xu Qin

Program Enrolled: Master

Program: 2021 Full-time Master for Biology

Program credit requirements:Total: 30 Credits of Required Modules: 0 General Fundamental Courses: Min Credits6 Min Courses4

Course Category	General Fundamental Courses	Program Core Courses	Program Frontier Courses	Program Elective Courses
Current Total Credit(Required)	6(6.0)	13(0)	9(0)	2(0)
Current overall GPA (required)	6(0.0)	13(0)	0(0)	0(0)
Courses(Planned/Required)	4/4	6/0	4/0	1/0
Total Credits (Completed/Planned/Required)	30/30/30			
Total GPA Credits (Completed/Planned/Required)	19/19/19			
GPA (Total/Completed/Required)	3.85/3.85/2.7/			
GPA Scheme				

收回

Print

General Fundamental Courses Subtotal :6

Operation	Course Code	Course Name	Credit	Hours	Semester	Counting GPA?	Exam Type	Instruction Language	Course Level
	FL6001	English for Academic Purposes Compulsory	2	32	2021 Fall	yes	Written Exam	English	Master & Doctoral
	GE6001	Scientific Writing, Integrity and Ethics Compulsory	1	16	2021 Fall	yes	Written Exam	Chinese/English in parallel	Master & Doctoral
	MARX6001	Theory and Practice of Socialism with Chinese Characteristics in the New Era Compulsory	2	32	2022 Spring	yes	Written Exam	Chinese	Master Course
	MARX6003	Introduction to Dialectics of Nature Compulsory	1	16	2022 Spring	yes	Written Exam	Chinese	Master Course

Program Core Courses Subtotal :13

Operation	Course Code	Course Name	Credit	Hours	Semester	Counting GPA?	Exam Type	Instruction Language	Course Level
	BIO6003	Guidelines for Scientific Research	2	32	2021 Fall	yes	Essay/Project	Chinese	Master & Doctoral
	BIO6301	The Regulation of Animals and Plants Gene Expression	2	32	2021 Fall	yes	Written Exam	Chinese	Master & Doctoral
	BIO6304	Microbial Ecology	2	32	2022 Spring	yes	Written Exam	Chinese	Master & Doctoral
	BIO6402	Structural Bioinformatics	2	32	2022 Spring	yes	Written Exam	English	Master & Doctoral
	BIO6403	Statistical Methods in Data Science	2	32	2022 Spring	yes	Written Exam	Chinese	Master & Doctoral
	STAT6002	Biology Mathematics I Compulsory	3	48	2022 Spring	yes	Written Exam	Chinese	Master & Doctoral

Program Frontier Courses Subtotal :9

Operation	Course Code	Course Name	Credit	Hours	Semester	Counting GPA?	Exam Type	Instruction Language	Course Level
	BIO8001	Development of Modern Life Sciences	3	48	2021 Fall	no	Tests	Chinese	Master & Doctoral
	BIO8503	Introduction to Computational Biology	2	32	2021 Fall	no	Written Exam	Mainly in Chinese	Master Course
	BIO8603	Laboratory Innovation Training	3	54	2022 Spring	no	Written Exam	Chinese	Master & Doctoral
	GE6011	Academic Lectures Compulsory	1	16	2022 Spring	no	Other	Chinese	Master & Doctoral

Program Elective Courses Subtotal :2

Operation	Course Code	Course Name	Credit	Hours	Semester	Counting GPA?	Exam Type	Instruction Language	Course Level
	BIO8002	Biosafety	2	32	2021 Fall	no	Written Exam	English	Master & Doctoral

Statement regarding Graduate Transcript

Shifeng Jiang

Attached to the transcript for my graduate (master's) studies are the certificate of student status and the graduate training plan. During my first year of master's studies, I completed all coursework required by my training plan.



To Whom It May Concern,

As the faculty advisor and founder of the Bio-X Institute's iGEM (International Genetically Engineered Machine Competition) team, I would like to proudly recommend one of our former team members, Shifeng Jiang, to participate in your graduate program. In early 2019, Shifeng joined our team as a new member.

In the early stages of our project, he actively engaged in brainstorming sessions within the team and shared novel ideas he had gathered from literature research and previous projects. During our weekly discussions, he often shared intriguing perspectives. Our idea of competition project "Mulan" eventually came into being as a result of numerous of discussions. The main concept of this project was to achieve mismatch reporting and information storage of CRISPR/Cas9 in *Escherichia coli*. As one of the project's main designers, Shifeng was responsible for designing experimental protocols, plasmids, and PCR primers, among other tasks. He worked almost every day during the summer, often working late into the night before returning to the dormitory, sometimes even after dormitory access hours.

As a key member of the experimental group, Shifeng demonstrated outstanding teamwork and strong experimental skills. It is true that we confronted various setbacks during the experiments. However, Shifeng showed persistence and optimism in spite of the difficulties. He and his teammates solved preliminary issues through extensive literature research and thoughtful analysis. Eventually, they successfully constructed a tool for reporting dCas9 mismatches by recombining dCas9 enzyme and split luciferase. Eventually, SJTUBioX-Shanghai 2019 iGEM came home with gold prize and best new application nomination. I could sense his growth in scientific exploration, critical thinking, and technical skills at every stage of the project.

Shifeng not only excels in lab work but also has a spirit of helping others. I remember the summer of 2019 when the experimental mice were at risk of death due to the sudden shutdown of temperature control system. Shifeng immediately joined my doctoral students upon knowing the situation. They wore protective suits and worked for 40 minutes in a confined space with temperature over 30 degrees Celsius. Finally, they succeeded in rescue of the mice.

To conclude, Shifeng possesses many admirable qualities, which I believe will accompany him towards greater success. He is a highly competitive candidate for graduate program of your University. I enthusiastically support his application without any hesitation and would like to provide further information on your request.

Yours sincerely,

Gang Ma, Ph.D.

Associate Professor

Instructor of SJTU-BioX-Shanghai iGEM Team

Bio-X Institutes

Key laboratory of MOE

School of Life Sciences and Biotechnology

Shanghai Jiao Tong University

800 Dongchuan Road, Shanghai 200240, P.R. China

Tel & fax: 0086 21 34207232

Email: magang@sjtu.edu.cn



生命学院生物信息系

Department of Bioinformatics and Biostatistics, College of Life Sciences and Biotechnology

To Whom it May Concern:

Dear Sir/Madam:

As the principle investigator of Wei lab as well as the founder of Department of Bioinformatics and Biostatistics, it is my pleasure to recommend one of my lab members, Mr. Shifeng Jiang as a competitive candidate for admission into your graduate program. I was acquainted to Shifeng in 2021 when he was participating undergraduate thesis project in my lab.

Before joining my lab, Shifeng was an undergraduate student of bioengineering major, where he received systematic wet lab training. Therefore, he demonstrated a deeper understanding when investigating biological issues and he always shared insightful ideas in the lab. Admittedly, joining a dry lab with wet lab background takes huge amounts of hard work. After his undergraduate graduation, he made great efforts to learn skills and knowledge of computational biology and quickly mastered excellent molecular dynamics simulation skills. During his master's degree study, he participated in many projects, such as dynamic investigations of mutational effects of both coagulation factors and transcription factor-DNA complexes, and construction of a large coagulation factor complex of VIII-IX-X. As a result of his diligence and creativity, he has several works published by or submitted to academic journals. The research works he conducted, I believe, are of high quality and demonstrate his capability of problem-solving within a specified period.

In addition to the above-mentioned qualities, Shifeng's patience is indispensable to his achievements. During a meeting for a collaborative project with clinicians in Ruijin Hospital, it was him who bridged the gap of clinical and dry lab understandings by explaining the mechanism and meaning of in silico findings for the whole afternoon. This quality will be treasure when he handles complex research problems in his academic journey.

Above all, Shifeng's potential for success in his future career is indisputable. I sincerely believe that he deserves admission to your graduate program in view of his promising research capabilities, appetite for learning and commitment to the goal. I believe Shifeng is a truly outstanding candidate having the combination of extremely gifted, thoughtful, deep-insight, whole-hearted dedicated and extremely hard-working. I recommend him to you in the strongest possible terms. I trust that these comments will be of use to you. If you require further information please do not hesitate to ask. My e-mail address is dqwei@sjtu.edu.cn.

Sincerely,

Dong-Qing Wei, Ph.D. FRSC

Professor and Editor-in-Chief

Email: dqwei@sjtu.edu.cn



上海交通大学
SHANGHAI JIAO TONG UNIVERSITY

Dear admission committee,

I am very pleased to have the opportunity to recommend my academically promising master student, Shifeng Jiang, to pursue his Ph.D. study in your program. I have been advising him since the senior year of his undergraduate study, and I would like to share my overall perspective on his academic performance with you.

In the past three years, Jiang demonstrated an excellence in research capabilities, as well as unique insights into biological questions by participating in several research projects. He honed his computational structural biology and computer programming skills during the studies of several macro-biomolecular systems including large protein complexes and DNA-protein complexes. Utilizing molecular dynamics simulation and other tools, Jiang investigated molecular mechanism on protein complexes, thus providing new perspectives for clinical and wet lab results.

His first research project with me was an investigation on an anticoagulant antibody. We went to the lab of our collaborators for discussions together, where he showed his capability of teamwork with clinicians and researchers of other backgrounds. His knowledge and experiences in wet labs also played an important role in these communications. At the same time, he grasped techniques and skills of bioinformatics and computational biology very quickly, which were totally new to him. He soon made important progress and revealed that the key mechanism of the antibody is not to neutralize the target protein, coagulation factor IX directly, but to block its binding with its activator, coagulation factor VIII. Based on our results, we purposed an experiment for our collaborators, which validated our hypothesis. I am proud of his achievements in his project.

In pursuit of academic interest, Jiang shows a persistent and pragmatic attitude. He often communicates with me about his interest in therapeutic protein engineering. After his attempt for design, he started learning new techniques to tackle the problem. On my recommendation, he is now also learning AI techniques in the group of Professor Liang Hong. Although he is new to the field, he has already made progress in his new project utilizing ESM language model. His crave for knowledge and ability to learn new skills are the bright spots for his future studies.

Creativity, curiosity, persistence. These are what I see crucial for a qualified researcher in Jiang. During the past years, I witnessed his growth in academic performance. He also maintained a rigorous and meticulous attitude in every of his projects. I believe that he will be a welcome addition to your team if given the opportunity. Therefore, I sincerely hope that you may consider his application seriously and accept him into your program.

Please contact me via email if you have any questions regarding this letter or need additional information. Thank you.

Bests,



上海交通大学
SHANGHAI JIAO TONG UNIVERSITY

Qin Xu

Qin Xu

Associate Researcher

Shanghai Jiao Tong University

Email: xuqin523@sjtu.edu.cn

Phone: 86-21-34204185

Address: 800 Dongchuan Road, Room 412 of Ye Jie-Quan building
Minhang District, Shanghai 200240, China