Hongyi Duan

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EDUCATION

- **Xi'an Jiaotong University (XJTU)** — **Xi'an, China**
  Bachelor of Engineering — *Aug. 2021 – Jun. 2025*
  Computer Science and Technology (XJTU Academic Elite Program)
  GPA 3.44/4.30
- **The University of Melbourne (Unimelb)** — **Melbourne, Australia**
  Study Aboard &Exchange Program — *Aug. 2023 – Jun. 2024*
  Computer Science

SELECTED PUBLICATIONS

* Donate equal contribution

1. Jianan, Z.*, & **Hongyi, D.*** (2023). Enhanced LFTSformer: A Novel Long-Term Financial Time Series Prediction Model Using Advanced Feature Engineering and the DS Encoder Informer Architecture. arXiv:2310.01884.
   Pre-print. Currently under review at IEEE Access (ISSN: 2169-3536 JCR-3).
   https://doi.org/10.48550/arXiv.2310.01884
2. Yuchen, L., Qingyang, L., **Hongyi, D.,** Donghe, L.(2024). Cognitive-Inspired Load Forecasting: An Enhanced Transformer-based Approach with NILM-derived Features
   Currently under review at IEEE Transactions on Automatic Control (ISSN: 0018-9286 JCR-2).
   https://www.overleaf.com/read/dtsbrnwxmgjd#a8ada1
3. Qingyang, L., Yuchen, L., **Hongyi, D**., Jialing, K., Jianan, Z., Xueqian, G & Ruotong, X.(2023). Improvement and Enhancement of YOLOv5 Small Target Recognition Based on Multi-module Optimization. arXiv preprint arXiv:2310.01806.
   Pre-print. Currently under review at Journal of Shanghai Jiaotong University(Science) (ISSN: 1995-8188)
   https://doi.org/10.48550/arXiv.2310.01806
4. **Hongyi, D.,** Qingyang, L., Yuchen, L., Tianjiao, J., Jianan, Z & Yuming, X.(2024). Comparative Study of Microgrid Optimal Scheduling Under Multi-optimization Algorithm Fusion, 2023 10th International Forum on Electrical Engineering and Automation (IFEEA), Nanjing, China, 2023, pp. 1082-1092. IEEE.
   Conference Paper, Published at IFEEA 2023.
   https://doi.org/10.1109/IFEEA60725.2023.10429466
5. **Hongyi, D**., Yuchen, L., Qingyang, L., Yiyi, W., Yuming, X & Haohui, P.(2023). Application and Analysis of Machine Learning Based Rainfall Prediction. In 2023 8th International Conference on Intelligent Computing and Signal Processing (ICSP)(pp. 1941-1949). IEEE.
   Conference Paper, Published at ICSP 2023.
   https://doi.org/10.1109/icsp58490.2023.10248891
6. Jianan, Z., **Hongyi, D** & Yuchen, L.(2023). Analyzing Bridge Resonance and Lateral Vibrations Using String Vibration Principles. arXiv preprint arXiv:2311.11061.
   Pre-print. Currently under review at Journal of Shanghai Jiaotong University(Science) (ISSN: 1995-8188)
   https://doi.org/10.48550/arxiv.2311.11061
7. Junhua, L., **Hongyi, D**., Jianan, Z & Yichi, Z.(2023). Preliminary Investigation of the Anti-fuzzy Ring Isomorphism Theorem. In 3rd International Conference on Applied Mathematics, Modelling, and Intelligent Computing (CAMMIC 2023) (Vol. 12756, pp. 857-864). SPIE.
   Conference Paper, Published at CAMMIC 2023.
   https://doi.org/10.1117/12.2685993
8. Jianan, Z., **Hongyi, D** & Bingsong, T.(2023). Epidemic Prediction Based on Entropy-improved Factor Analysis and WOA- optimized BP Network Algorithm. In International Conference on Computer, Artificial Intelligence, and Control Engineering (CAICE 2023) (Vol. 12645, pp. 911-919). SPIE.
   Conference Paper, Published at CAICE 2023.
   https://doi.org/10.1117/12.2681323
9. **Hongyi, D**., Jianan, Z & Haohui, P.(2023). BP Neural Network Based Wireless Sensor Network for Solar Energy Prediction. In 2nd International Conference on Algorithms, Microchips, and Network Applications (AMNA 2023)(Vol. 12635, pp. 299-313). SPIE.
   Conference Paper, Published at AMNA 2023.
   https://doi.org/10.1117/12.2678916
10. **Hongyi, D** & Jianan, Z.(2023). Nuclear Weapon Prediction Based on the Verhulst Method of Comprehensive Weighting and LS- SVM Equidimensional Information Supplement. In 2nd International Conference on Algorithms, Microchips, and Network Applications (AMNA 2023)(Vol. 12635, pp. 299-313).SPIE.
    Conference Paper, Published at AMNA 2023.
    https://doi.org/10.1117/12.2678905

EMPLOYMENT EXPERIENCE

- **Deep Learning Algorithm Engineer** **Apple Inc.**
  Internship. *May. 2024 – Sep. 2024*
  Assisted in the development and refinement of Apple's MLX Deep Learning Framework.

RESEARCH & ACADEMIC EXPERIENCE

- **Grid Metrics Forecasting and Microgrid Scheduling Study** **XJTU**
  Research Assistant in Automatic Control Center; Advisor: Prof. Qingyu Yang. *Feb. 2022 – Present*
  Proposed NILMformer, a novel Transformer-based model to improve household load forecasting accuracy using non-intrusive load monitoring, designed a grid scheduling model based on a multi-fusion optimization algorithm.
- **2023 Winter Frontier Research Program: Deep Learning in Computer Vision** **MIT**
  Student and Student Representative; Advisor: Prof. Alexander Amini. *Jan. 2022 - Mar. 2022*
  Designed an attention mechanism-optimized YoloV5 pattern recognition model.
- **Fuzzy Mathematics and Numerical Analysis Research** **SUFE**
  Research Assistant in Professor Xu Dinghua' s team; Advisor: Prof. Dinghua Xu. *Dec. 2022 - Feb. 2023*
  Demonstrated the isomorphism theorem of the anti-fuzzy ring based on anti-fuzzy group isomorphism, designed a numerical analysis model for bridge vibration.
- **Reviewer of Computational Economics (ISSN: 1572-9974, JCR-4)** **CSEM**
  Reviewer; Editor in handling: Fredj Jawadi, PhD. *Nov. 2023 - Present*
  Reviewed several manuscripts in the fields of data science, economics, and related areas as a peer reviewer.

PROJECT & CLUB EXPERIENCE

- **China University Computer Competition 2022**(WeChat Applets Development) **XJTU**
  Member; Advisor: Assoc. Prof. Tao Xie. *Oct. 2021 – Jun. 2022*
  Built a WeChat applets called XJTU Cloud Guides (unreleased) using WXML/CSS/JavaScript.
- **XJTU Rùn Academic Club** **XJTU**
  Founder and Leader. *Jan. 2022 – Present*
  Founded the academic exchange organization among students, organized several machine learning projects.

PRESENTATIONS

- **2024 6th National Development Youth Forum.** *Apr 2024*
  Organizer : National School of Development at Peking University
  Outstanding paper invited talk.
- **2023 8th International Conference on Intelligent Computing and Signal Processing.** *May 2023*
  Organizer : ICSP 2023 Committee, Xi'an Shiyou University
  Best paper invited talk.

AWARDS

- **Xi'an Jiaotong University Academic Elite Program** *2021-2025*
  Academic Elite Program Scholarship (240000 RMB in total).
- **2023 8th International Conference on Intelligent Computing and Signal Processing** *2023*
  Best Paper Award.
- **China International College Students' Innovation Competition 2023** *2023*
  Outstanding work of Shannxi Province.
- **China International College Students' Innovation Competition 2022** *2022*
  Outstanding work of XJTU.

KEY SKILLS (RANKED BY PROFICIENCY)

- **Machine Learning/Data Analysis**
  Deep Learning: *CNNs, Transformer/Informer, RNN/LSTM.*
  Machine Learning: *SVM, KNN, Fuzzy Rules, Decision Trees, Bayes.*
- **Programming:** *C/C++, MATLAB, Python/Pytorch, SQL, Javascipt, System Verilog, 8086 Assembly.*
- **Documentation:** *Latex, Markdown, Microsoft Office, Jupyter Notebook , XML/HTML.*
- **Design:** *Multism, Modelsim.*
- **Skills:** *Git/Github, Ubuntu/Linux, Anaconda.*

MEMBERSHIP

- **IEEE & IEEE Computer Society** *2022 - Present*
  Student member | Member number: 98983270.
- **ACM & ACM Xi'an Section** *2022 - Present*
  Student member | Member number: 8641608.

西安交通大学 XI'AN JIAOTONG UNIVERSITY

本科生成绩单
Transcript of Undergraduate Student

姓名: 段弘毅
Name: DuanHongYi
学院: 电子与信息学部
School: Faculty of Electronic and Information Engineering

入学年月：2021年09月 Date of Enrollment: September 2021
学号：2213611582 Student No.: 2213611582
出生日期：2003年08月06日 Date of Birth: August 06,2003
专业：计算机科学与技术（越杰班） Major: Computer Science And Technology (XJTU Academic Elite Program)
毕业年月： Date of Graduation:
学制：4年制 Length of Schooling: Four Years
性别：男 Gender: Male
专业班：计算机越杰2101
绩点：3.44 GPA: 3.44
学分成绩：84.79 Average Score: 84.79

第一学年（2021-2022）第一学期 1st Academic Year（Semester 1）（2021-2022）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
制冷技术概论：从地面到空间 Introduction to Refrigeration Technology: From Ground to Space	2	89	3.7
线性代数与解析几何 Linear Algebra and Geometry	4	95	4.3
通用学术英语 English for General Academic Purposes	2	86	3.7
体育-1 Sports-1	0.5	73	2.3
思想道德与法治 Moral and Legal Education	3	80	3.0
社会主义发展史 History of Socialism	2	83	3.3
军训 Military Skill Training	2	88	3.7
国防教育 National Defence Education	2	88	3.7
高等数学I-1 Advanced mathematics I-1	6.5	72	2.3
大学化学实验 University Chemistry Experiment	1	91	4.0
大学化学 College Chemistry	3	93	4.0
材料与人类文明 Materials in Human Civilization	2	86	3.7

第一学年（2021-2022）第二学期 1st Academic Year（Semester 2）（2021-2022）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
中国近现代史纲要 Outline of Modern Chinese History	2	79	3.0
英语学术论文写作 Fundamentals of Academic Writing	2	79	3.0
体育-2 Sports-2	0.5	75	2.7
宏观经济学 Macroeconomics	2	85	3.7
高等数学I-2 Advanced Mathematics I-2	6.5	85	3.7
大学物理实验I-1 University physics experiments I-1	1	A -	3.7
大学物理II-1 University Physics II-1	4	97	4.3
大学生心理健康与自我调适 College Student Mental Health and Self-adjustment	2	89	3.7
大学计算机I College Computer I	3	91	4.0
出国访学准备（钱学森学院） Getting Ready to Study Abroad	2	87	3.7
表达与交流 Presentation and Communication	3	85	3.7

第二学年（2022-2023）第一学期 2nd Academic Year（Semester 1）（2022-2023）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
体育-3 Sports-3	0.5	67	1.7
数学物理方程 Mathematical and physical equation	2	77	2.7
毛泽东思想和中国特色社会主义理论体系概论 Introduction to Mao Zedong's Thoughts and to the Theories of Socialism with Chinese Characteristics	2	86	3.7
离散数学A Discrete Mathematical Structures	4	86	3.7
计算机程序设计 Programming Fundamentals	5	81	3.3
概率统计与随机过程 Probability Theory and Stochastic Process	4	89	3.7
复变函数与积分变换 Complex Analysis and Integral Transformation	3	75	2.7
电路 Circuits	4.5	80	3.0
大学物理实验I-2 University physics experiments I-2	1	A	4.0
大学物理II-2 University Physics II-2	4	92	4.0

第二学年（2022-2023）第二学期 2nd Academic Year（Semester 2）（2022-2023）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
习近平新时代中国特色社会主义思想概论 Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	3	89	3.7
体育-4 Sports-4	0.5	72	2.3
数据结构与算法A（拔尖班） Data Structure and Algorithms A (Honor)	4	72	2.3
生命科学基础I Foundation of life science (I)	3	95	4.3
马克思主义基本原理 Basic Principles of Marxism	3	83	3.3
计算机系统导论 Introduction to Computer Systems	3.5	89	3.7
电子技术基础 Fundamentals of electronic technology	4	63	1.3
电工实习 I Electronic Technical Practice	1	B +	3.3

第二学年（2022-2023）第三学期 2nd Academic Year（Semester 3）（2022-2023）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
当代大学生婚恋之道 The Lecture for Contemporary College Students' Love and Marriage	2	94	4.0
储能技术创新与能源革命 Energy storage technology innovation and energy revolution	2	96	4.3

第三学年（2023-2024）第一学期 3rd Academic Year（Semester 1）（2023-2024）

课程 Course	学分 Credit	成绩 Score	绩点 GPA
星际航行与低温技术 Astronavigation and Cryogenic Technologies	2	98	4.3
西方哲学的智慧 The Wisdom of Western Philosophy	2	90	4.0
人工智能 Artificial Intelligence	2.5	82	3.3
计算机网络 Computer Network	3.5	80	3.0
计算机图形学 Computer Graphics	2.5	89	3.7
操作系统 operating system	2	93	4.0

百分制	95~100	90~94	85~89	81~84	78~80
Centesimal Grade 等级	优+(A+)	优(A)	优-(A-)	良+(B+)	良(B)
Grades 绩点	4.3	4.0	3.7	3.3	3.0
GPA					
75~77 良-(B-)	72~74 中+(C+)	68~71 中(C)	64~67 中-(C-)	60~63 及格(D)	0~59 不及格(F)
2.7	2.3	2.0	1.7	1.3	0

GPA=∑课程学分X绩点/∑课程学分
(采用二等级制记载的课程成绩不参与GPA计算)
GPA=∑creditX grade/∑credit
(Course marks recorded by two-tier system are not calculated by GPA)

咨询电话(Tel)：+86-29-82666406

* 交流置换课程(Exchange Course)
P 代表 Pass(P Pass)

注册员：赵艳琴 Registrar :

打印时间:2024年3月3日 Issued Date:March 3,2024

盖章: Seal:

西安交通大学本科生院 专用章 (2)

IEEE

Rara Selie <dann_hiroaki@ieee.org>

2025 Fall 1st Early Round Admission for CUHK CSE MPhil - PhD programme

1 封邮件

Morris Chow, Mr. (CSD) <morrischow@cuhk.edu.hk> 2024年6月3日 18:14
收件人："dann_hiroaki@ieee.org" <dann_hiroaki@ieee.org>

Dear HONGYI Duan,

Thank you for submitting your application for graduate admission to the CSE Department at the Chinese University of Hong Kong. **I am pleased to inform you that your application has been carefully reviewed, and you have been granted an exemption from the interview process.**

This year, we experienced an unprecedented volume of applications. Due to the limited capacity of our interview process, we have identified a group of exceptional applicants with outstanding academic achievements. These candidates, which include you, have been directly advanced without the need for an interview.

Please be aware that this communication does not constitute an offer of admission to our program. To proceed further, you must initiate a conversation with one of our professors to discuss your academic interests and qualifications. If a professor deems you a suitable candidate, they may then extend an offer to you.

We appreciate your interest in our department and wish you the very best in your academic pursuits.

Best regards,
Morris

Department of Computer Science and Engineering
The Chinese University of Hong Kong