Nan Li

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Education

University of Zurich (UZH) *Zurich, Switzerland*
PhD in Neuroscience Oct. 2024 - Current
- **Research interests**: Machine Learning, Human-Computer Interaction, Explainable Artificial Intelligence, EEG, Eye-tracking, Information Visualization

University of Zurich (UZH) *Zurich, Switzerland*
MSc in Computer Science (Major: Artificial Intelligence) Sep. 2022 - Oct. 2024
- **Research interests**: Explainable Artificial Intelligence, Human-Computer Interaction, Time-Series Classification
- **Master Thesis**: Interpretable Machine Learning Algorithm for Drunk Driving Detection
- **Master Project**: Explainability method for Recommender Systems

Beihang University (BUAA) *Beijing, China*
BEng in Software Engineering Sep. 2016 - Jun. 2021
- **GPA**: 87/100 (Top 17%)
- **Thesis**: Project Review Assistant System Based on BlockChain

Representative Projects

Multi-Robot Interactive Simulation and Analysis Platform *Zurich*
Programming, Education, and Computer-Human Interaction Lab (PEACH Lab) - ETHz Mar. 2024 - Present
- **Objective**: An interactive simulation and visualization framework to facilitate quadrupedal locomotion learning.
- **Contributions**:
  - Formative Study: Conducted interviews with robotics experts to identify key challenges and strategies in locomotion policy analysis.
  - Framework Implementation: Designed and developed the framework, an interactive tool integrating simulation, trajectory, metrics visualization, and key frame capturing for locomotion policy analysis.
  - User Evaluation: Conducted a user study with robotics practitioners to assess the tool's effectiveness, demonstrating its ability to provide immediate insights and enhance exploratory analysis.

Interpretable Machine Learning Algorithm for Drunk Driving Detection *Zurich*
Bosch IoT Lab | ETH Zurich | University of St. Gallen Dec. 2023 - Aug.2024
- **Objective**: Develop interpretable machine learning algorithms to detect drunk driving using CAN bus data.
- **Contributions**:
  - Analyzed CAN bus and other related data from real vehicles to create accurate models.
  - Developed and trained interpretable time-series classification models including logistic regression, CNNs, RNNs, and state-of-art multivariate time-series classification models.
  - Explored techniques for comprehensive explanations of model predictions.

Explainability Method for Recommender Systems *Zurich*
Dynamic and Distributed Information Systems Group - UZH Feb. 2023 - May. 2024
- **Objective**: Research and implement explainable methods for recommender system.
- **Result**: Paper submitted to the ACM Conference on Recommender Systems (RecSys)
- **Contributions**:
  - Extended the Cornac Python package with new explainable recommend models, explanation algorithms, and evaluation metrics.
  - Developed a pipeline to facilitate the workflow and documented a detailed report.
  - Specialized in matrix factorization-based models and explanation methods.

Project Review Assistant System Based on Block Chain *Beijing*

School of Software - BUAA Nov. 2020 - Jun. 2021

- **Objective**: Develop a project review web application utilizing blockchain technology and distributed storage.
- **Contributions**:
  - Developed the frontend using JavaScript and TypeScript with React and backend with Java and Kotlin using SpringBoot, and MongoDB.
  - Integrated blockchain technology using Hyperledger Fabric and Go-lang, with IPFS for distributed storage.
  - Enabled functionalities such as project uploads, reviews, ratings, and reviewer suggestions.

Interactive Instrument Dombra: Blending Tradition with Technology *Beijing*

National Innovation and Entrepreneurship Training Program Mar. 2017 - Oct. 2018

- **Objective**: Facilitate Dombra learning and practicing without the need for an actual human teacher.
- **Contributions**:
  - As the team leader, spearheaded project coordination, facilitated collaboration among teachers and students, and established connections with instrument crafters.
  - Transformed the traditional musical instrument Dombra into an interactive instrument by integrating sensors and controlling it with a microcontroller.
  - Designed and developed a user-friendly mobile application to support learning and practice for students.

On-Campus Works

Practical Tutor *Zurich*

Lecture: Foundations of Data Science (Graduate Level) Sep. 2023 - Feb.2024

- Graded practical assignments and written exams.
- Collaborated with fellow tutors to provide comprehensive student support by addressing questions.

Teaching Assistant *Beijing*

Lecture: Compiler Theory (Undergraduate Level) Sep. 2020 - Jan. 2021

- Graded assignments and assisted in providing skeleton code support for programming projects.

Leader of Teaching Assistant *Beijing*

Lecture: Object-Oriented Programming (Java) (Undergraduate Level) Feb. 2020 - Jun. 2020

- Coordinated the activities of teaching assistants, ensuring effective development of assignments, exercises, and all exams.
- Assisted the professor in managing the online course.

Teaching Assistant *Beijing*

Lecture: Algorithm Analysis and Design (Undergraduate Level) Sep. 2019 - Jan. 2020

- Conducted bi-weekly tutorial sessions and provided assistance to students during tutorials.
- Crafted and graded programming exercises and final exam questions.

Awards and Honors

Jun. 2021	**Honor Certificate**: Outstanding Graduate of Beihang University	*Beijing*
2020, 2019, 2018	**Scholarship**: Excellent Scholarship for Academic Performance (3 times)	*Beijing*
2019, 2018	**Scholarship**: Excellent Scholarship for Social Work (2 times)	*Beijing*
2019, 2017	**Honor Certificate**: Merit Student (2 times)	*Beijing*
Jan. 2019	**Scholarship**: Lee Kum Kee Innovation Scholarship	*Beijing*

Skills

Programming Languages	Python, Java, C++, C, JavaScript, TypeScript, SQL, Kotlin, Golang, Matlab, LaTeX
Machine Learning	PyTorch, TensorFlow
Application Development	React, Vue, QT, Spring Boot, MySQL, MongoDB
Version Control and Other Tools	Git, SolidWorks
Languages	Chinese (Native), English (C1)
Soft skills	Problem-Solving, Time Management, Collaboration, Adaptability, Leadership