

# Enqi Jing

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## SUMMARY

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I am currently pursuing a Master's degree in Scientific Computing and Predictive Modelling at the University of Warwick. My academic journey is fueled by a profound interest in machine learning (ML) and its practical applications. This passion has led me to gain hands-on experience in designing intelligent systems, a journey that encompasses both research projects and extracurricular professional activities within the realms of civil and environmental engineering. My work stands at the crossroads of Computer Science and Geotechnical Engineering, offering a unique interdisciplinary perspective. I bring a robust foundation in Computer Science, coupled with innovative problem-solving abilities and a collaborative mindset, all of which are essential in driving forward the integration of artificial intelligence within the field of geo-engineering.

## EDUCATION

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**University of Warwick** Coventry, UK  
Master of Science (MSc), Predictive Modelling and Scientific Computing, Expected Distinction degree 2023–2024  
*Dissertation title: "Leveraging Data-Driven Insights for Enhanced Aluminium Pressing Quality"*  
Supervisor: Dr Ishwar Kapoor

**University of Warwick** Coventry, UK  
Bachelor of Science (BSc) Computer Science, 2:1 Honours Degree 2020–2023  
*Dissertation title: "Location Extraction and Movement Prediction for Trajectory"*  
Supervisor: Prof. Nathan Griffiths

**University of Warwick** Coventry, UK  
Warwick International Foundation Programme, Computer Science, First Class 2019–2020

## RESEARCH EXPERIENCE

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**Leveraging Data-Driven Insights for Enhanced Aluminium Pressing Quality** Coventry, UK  
WMG, University of Warwick  
*Research Assistant* Sep. 2023– present

Collaborative research project with a UK-based company. Employing machine learning algorithms to investigate the mechanical properties of aluminum alloys. The study focuses on analyzing pressing profiles and quality check data from production lines.

- Conducted intensive two-week data collection on aluminum press profiles for DNN model training, essential for predicting material behavior in civil structures.
- Developed a DNN model, achieving a significant increase in prediction accuracy (by 15%) and enhanced generalization, compared to SVR and SNN models.
- Analyzed noise variables in the aluminium ageing process, critical for understanding material longevity in civil engineering applications.
- Achieved a 35% improvement in DNN predictive accuracy, demonstrating its potential in optimizing material selection and design in civil engineering projects.

## Construction Data Analysing and Modelling

Warwick AI Society, University of Warwick

*Research Assistant*

Coventry, UK

Oct. 2022 - Mar. 2023

Engineered a Chrome extension for the Warwick AI Society project, harnessing semantic analysis and topic modeling to distill the sentiment from database, facilitating a data-driven approach to data assessment.

- Data extraction via web API, aggregating a comprehensive dataset for processing construction data and urban development information.
- Refined text analysis methodologies to optimize model precision in scrutinizing structural health monitoring data and environmental impact assessments.
- Crafted a NLP pipeline in **Python** to refine text analysis, incorporating sentiment analysis, topic modeling, and feature ranking algorithms. It highlights the project documentation and stakeholder feedback.
- Worked in a multidisciplinary team, collaborating with front-end and back-end engineers

## Location Extraction and Movement Prediction from GPS Trajectory

Department of Computer Science, University of Warwick

*Research Assistant*

Coventry, UK

Sep. 2022 - Jun. 2023

Undergraduate Research project, supervised by Prof. Nathan Griffiths. Enhanced trajectory prediction with novel clustering and LSTM deep learning models, proven effective on GeoLife and heterogeneous traffic datasets.

- Implemented two clustering-based location extraction models for road networks.
- Conducted comprehensive data pre-processing, including trajectory segmentation and model optimization, to analyse the traffic patterns.
- Enhanced trajectory prediction models, achieving a 10x improvement in execution time and accuracy on GeoLife dataset.

## Cyber Risks and Threats Associated With Vehicle to Grid

WMG, University of Warwick

*Research Assistant*

Coventry, UK

Jun. - Oct. 2022

Summer internship project, supervised by Dr Gregory Epiphanou. Undertook a comprehensive analysis of the potential risks and threats to the electrical grid from vehicle-to-grid (V2G) integration, synthesizing findings from existing literature to inform advancements in automotive grid interactions.

- Executed a focused literature review to assess the cybersecurity landscape of V2G systems.
- Evaluated ancillary service-related security vulnerabilities, contributing to the development of a risk identification framework.
- Collaborated effectively with supervisor, facilitating project advancement through weekly sessions.

## WORK EXPERIENCE

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### Ishangu Cybersecurity Intern

Information System Engineer Database Management

*Engineer*

Zhengzhou, China

Summer 2023

- Managed and optimized a suite of databases (MySQL, Oracle, Kingbase8) within the Kylin operating system.
- Executed advanced Linux commands for server administration, achieving efficient system maintenance, backup, and disaster recovery operations.
- Implemented virtualization technologies to streamline IT infrastructure.

### Amazon.com, Inc Intern

*Data Intelligence Engineer*

Remote

Sep. 2022 - Feb. 2023

- Built ETL data transformations for automated data collection with **PostgreSQL** and developed REST APIs for data queries using Flask.
- Developed a daily-updated data visualization dashboard for COVID-19 risk levels in Amazon Fulfillment Centres using **Tableau**, enabling drillable exploration of the pandemic's impact.
- Performed database design and data modeling in AWS and implemented Covid-19 prediction and recommendation models using **Python**.

## VOLUNTEERING

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### Volunteer Experience at University of Warwick

University of Warwick

Warwick, UK

Aug. 2021 - Apr. 2023

Engaged in diverse volunteering roles, enhancing community engagement and developing professional skills in communication and event management.

- Acted as a Warwick Award representative at the university careers fair, where I effectively communicated program benefits and inspired student participation, honing my public speaking and engagement abilities.
- Participated in Warwick Championship Volunteers, contributing to the organization of various university events, thereby strengthening my teamwork, organizational skills, and ability to execute large-scale events successfully.

## SKILLS

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### Technical

- **Advanced:** Python, NumPy, Pandas, Git, L<sup>A</sup>T<sub>E</sub>X, matplotlib
- **Intermediate:** Linux, Java, SciPy, PostgreSQL, Matlab, Pandas, Docker
- **Modelling:** Trajectory Modelling, Time Series Analysis, Emotion Classification Modelling
- **Specialized in:** PCA, Clustering, MLP, Grid Search, CNN, ResNet, RNN, Keras, Scikit-Learn, PyTorch

### Linguistic Proficiency

- English (Proficient), Madarian (Native)

### Behavior Ability

- Ability to work collaboratively as part of a team
- Strong interpersonal and communication skills
- Meticulous attention to detail
- Excellent administrative and organisational skills
- poised under pressure
- leadership