

Zikun Fu

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[GitHub](#)

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SUMMARY

Graduate student in Information Science with over 4 years of experience in object-oriented programming and a focus on machine learning, databases, and natural language processing. Inquisitive and driven, with a passion for bridging technology with human understanding.

SKILLS

System Administration

- Proficient in Linux-based environments (Ubuntu).
- Experience: Docker and Docker Compose for containerization and deployment.
- Automation scripting with Python and Bash.

AI/ML and Data Science Expertise

- Frameworks: TensorFlow, PyTorch, Hugging Face Transformers.
- Experience: Fine-tuning, model evaluation, and embedding-based semantic search.
- Tools: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn.
- Applied AI/ML techniques to improve performance and streamline processes.

Programming & Database Management

- Languages: Proficient in Python, SQL, Java.
- Tools: SQL, PostgreSQL, MySQL, MongoDB
- Expertise: Database design, query optimization

Collaboration & Version Control

- Tools: Git, GitHub
- Methodologies: Agile (Scrum, Kanban), Test-driven development (TDD) and continuous integration (CI/CD) practices
- Strong teamwork and communication skills

Other Skills

- Strong problem-solving abilities and algorithmic thinking
- Proficient in Jupyter Notebook, VSCode, and Linux environments
- Self-motivated and proactive in identifying and solving technical challenges.

EDUCATION

Bachelor of Science (Hons) Computer Science

Ontario Tech University

- Specialization: Data Science
- GPA: 3.86/4.3
- Achievements: President's List, Dean's List (3 consecutive years)

Master of Information Science

Ontario Tech University

- Focus: Machine Learning, Database, Natural Language Processing
- GPA: 4.15/4.3
- Expected Graduation: 2025

PROJECTS

Closed Domain Named Entity Recognition

2024 Fall

[Thesis Project](#)

- **Developed** a pipeline to convert text-to-SQL datasets (BIRD, Spider) into benchmarks for Closed-Domain Named Entity Recognition (CD-NER).
- **Enhanced** domain-specific NER by creating evaluation resources for large, fixed entity pools.
- **Presented** findings at [Ontario Database Day](#) 2024, University of Waterloo, fostering discussions on advancing database-grounded NLP.

Semantic Search Using Embedding Models

2024 Spring

[Github](#)

- **Evaluated** state-of-the-art embedding models with domain-specific instructions to improve semantic representation.
- **Utilized** advanced techniques to fine-tune models, resulting in improved accuracy and relevance in search results.
- **Gained** proficiency in embedding techniques and their application in real-world scenarios.

Facial Emotion Recognition Analysis

2023 Winter

[Github](#)

- **Applied** state-of-the-art models in affective data science to analyze genuine vs. posed emotional expressions.
- **Utilized** Py-Feat for feature extraction and employed Matplotlib, Pandas, and Scikit-learn for data analysis and visualization.
- **Achieved** high classification accuracy in distinguishing between genuine and posed emotions.
- **Received** an A+ for outstanding performance in the course.

Web Application Development

2022 Winter

[Github](#)

- **Developed** a fully responsive website, handling both front-end and back-end development using Node.js, CSS, SVG, JavaScript, Pug, and MongoDB.
- **Researched and integrated** Google API independently, enhancing the website's functionality.
- **Led the project team** by organizing schedules, setting up communication tools (Discord and OneNote), dividing tasks, and ensuring deadlines were met.
- **Demonstrated** strong web development and API integration skills, delivering a website that exceeded both functional and non-functional requirements.
- **Achieved** an A+ for the project, reflecting its high quality and successful execution.

Big Data Analytics

2022 Winter

Personal Assignment

- **Implemented and analyzed** frequent itemset algorithms, including, Apriori, PCY, sampling and SON algorithms to conduct market-basket analysis.
- **Used data mining** application Weka to build models from real world data sets and conducted evaluations of different data mining algorithms.
- **Gained** valuable data cleaning and Machine Learning knowledge.

Database Systems and Concepts

2021 Fall

Movie Database Design

- **Designed and implemented** a movie database similar to IMDb using PostgreSQL and Toad Data Modeler.
- **Developed** strong SQL programming skills and became proficient with database systems.
- **Successfully operated** the database with sample data and SQL queries, ensuring accurate and efficient data retrieval.

Software Design & Analysis

2020 Winter

Personal Assignment

- **Designed** a Curbside Pickup System, utilizing Use Case Diagrams, Domain Models, Interaction Models, Design Models, and State Diagrams.
- **Enhanced system design expertise** and gained hands-on experience with Microsoft Visio.
- **Delivered** a viable and consistent system, receiving an A+ for the assignment.

Systems Integration & Development

2020 Winter

Group Project Leader

- **Implemented** a text-based multiplayer game with a GUI interface, featuring a multithreaded server and client in Java.
- **Led the project team** by organizing schedules, setting up communication tools and managing task assignments and deadlines.
- **Gained valuable Java GUI programming experience**, ensuring the game operated with bug-free systems and features.

WORK

GREx Redevelopment Project Manager

Dec 2024 - Present

The Educational Informatics Laboratory (EILab), OTU

- Leading the migration of the GREx architecture from Symfony/Laravel to a Dockerized environment using LimeSurvey and MySQL, ensuring high availability and scalability.
- Configured and maintained Linux-based virtual machines (DigitalOcean Droplet) for testing and deployment using Docker Compose.
- Implementing a unified, containerized system architecture to enhance environment consistency and reduce maintenance complexity.
- Collaborating with stakeholders to define system requirements and achieve functional parity with the existing GREx platform.

Teaching Assistant

Jan 2024 - Present

Ontario Tech University

- Supported the CSCI4020U Compilers course through lectures, labs, and assignment grading.
- Provided expertise in Kotlin, ANTLER and other relevant programming languages and tools.

Facilitated communication between students and the course instructor, ensuring clarity in course material and expectations.

VOLUNTEER

TED Translators

2018

Volunteer in Subtitle Translation

- Translated and edited subtitles for TED and TEDx talks, published on TED.com.
- Developed strong collaboration and platform adaptation skills through online teamwork.