

Jiliang (Eric) Li

Phone: +1 917 974-6368 | Email: ericlij@stanford.edu | LinkedIn

EDUCATION

Stanford University

Master of Science in Computer Science

Stanford, CA, USA

Sep. 2024 – Jun. 2026

Vanderbilt University

B.S. in Computer Science, Mathematics | GPA: 4.00/4.00 | Summa Cum Laude

Nashville, TN, USA

Aug. 2020 – May 2024

Coursework: Data Structures, Algorithms, Operating Systems, Database Management Systems, Software Engineering, Programming Languages, Compiler Construction, Social Network Analysis, Machine Learning, Deep Learning.

PUBLICATION

- [C1] **Jiliang Li***, Zihan Fang*, Anda Liang*, Gina R. Bai, Yu Huang: *A Comparative Study on ChatGPT and Checklist as Support Tools for Unit Testing Education*. Under review by the Technical Symposium on Computer Science Education (**SIGCSE TS**), 2025.
- [C2] **Jiliang Li**, Yifan Zhang, Yu Huang, Kevin Leach: *MalMixer: Few-Shot Malware Classification with Retrieval-Augmented Semi-Supervised Learning*. Under Review by the Network and Distributed System Security (**NDSS**) Symposium, 2025.
- [C3] Yifan Zhang, **Jiliang Li**, Kexin Pei, Yu Huang, Kevin Leach: *VulRAG: Code Vulnerability Repair by Retrieval-Augmented Generation*. Under Review by the 47th IEEE/ACM International Conference on Software Engineering (**ICSE**), 2025.
- [C4] Yifan Zhang, **Jiliang Li**, Zachary Karas, Aakash Bansal, Toby Jia-Jun Li, Collin McMillan, Kevin Leach, Yu Huang: *EyeTrans: Merging Human and Machine Attention for Neural Code Summarization*. In Proceedings of the ACM International Conference on the Foundations of Software Engineering (**FSE**), 2024.
- [C5] **Jiliang Li**, Yifan Zhang, Zachary Karas, Collin McMillan, Kevin Leach, Yu Huang: *Do Machines and Humans Focus on Similar Code? Exploring Explainability of Large Language Models in Code Summarization*. In Proceedings of the 32nd IEEE/ACM International Conference on Program Comprehension (**ICPC**), 2024.

RESEARCH EXPERIENCE

Vanderbilt University

Undergraduate Researcher (funded), Advisors: Prof. Yu Huang & Prof. Kevin J. Leach

Jun. 2022 – Present

Nashville, TN, USA

- **Few-shot Malware Classification**: Designed a semi-supervised malware classifier, pioneering efficient & semantics-aware malware data augmentation through information retrieval, invariance learning, and alignment techniques. The classifier achieved SOTA results with 5.60% improvement in few-shot settings and 11.44% improvement under concept-drift.
- **Merging Human & Transformer Attention**: Pioneered a Transformer-based NLP model whose self-attention weights are refined using human attention data captured through eye-tracking. The model is applied to neural code summarization tasks with a 29.91% performance improvement, showcasing the potential of integrating human attention into ML models.
- **LLM Feature Attribution Analysis**: Comprehensively evaluated feature attribution in six LLMs (GPT, Llama 2, StarCoder, etc.) in code summarization through Shapley-value analysis; compared against human eye-tracking attention patterns.
- **Reinforcement Learning for LLMs for Code**: Generating negative code samples using RL with compiler-in-the-loop.

University of Illinois Urbana-Champaign

Summer Research Intern, Advisor: Prof. Lingming Zhang

Apr. 2023 – Sep. 2023

Champaign, IL, USA

- Pioneered a universal LLM-based fuzzer targeting compilers of any programming language, with LLM-mutated code inputs integrated in the fuzzing loop; tested on 7 languages with significantly improved coverage and uncovered 76 new bugs.
- Specialized in JIT vulnerabilities within the V8 JavaScript engine; offered expertise in instrumentation, auto-prompting, and compiler and systems programming to refine fuzzing algorithms for targeted vulnerability exploitation.

WORK EXPERIENCE

Wave Dynamics Inc.

Software Engineer Intern

May 2024 – present

Nashville, TN, USA

- Develop a full-stack ticket sales visualization and management dashboard generating \$120,000+ monthly revenue using Next.js and Node.js.
- Leverage Firebase to for scalable data storage and Google/Firebase authentication for secure data retrieval.

- Worked on the post-investment team to eliminate future manual processing of 3 portfolio companies' operational data.
- Implemented a full-stack web service in React.js, Flask, and MySQL for robust client data catalog collection and storage.
- Automated the conversion of raw operational data into financial statements using Pandas, NumPy, OpenPyXL, and Seaborn.
- Built an interactive sales performance visualization interface using D3 for real-time strategic insights.

TEACHING EXPERIENCE

Vanderbilt University School of Engineering

Jan. 2024 – May 2024

Teaching Assistant (TA) of CS 4278: Principles of Software Engineering

Nashville, TN, USA

- Hosted weekly Office Hours and Piazza Q&A sessions to guide around 50 students in topics such as software testing, software development cycles, and program repair; assisted one professor in proctoring, grading, and exam creation.
- Led and taught two full class sessions for lecture material review on mutation testing, dataflow analysis, and open-source contribution.

Teaching Assistant (TA) of CS1101: Programming and Problem Solving

Aug. 2022 – Dec. 2023

- Hosted weekly Office Hours and Piazza Q&A sessions to guide around 200 students in topics such as algorithm design and OOP in Java; assisted two professors in proctoring and grading.
- Lead weekly recitation sessions for about 10 students to provide in-depth analysis of lecture materials.

ACADEMIC PROJECTS

OnlineOrder: A Spring and Hibernate based online food ordering system

GitHub Repo

- Implemented Rest API via Spring MVC including registration, menu searching and ordering, checkout etc.
- Provided both authentication and authorization via Spring security to protect the application from malicious attacks.
- Utilized Hibernate ORM to access and operate the data storage (menu, restaurants, etc.).
- Build the client-side frontend with React.js and Ant Design to allow users add items to the shopping cart and place orders. Deployed the dashboard to Amazon Web Service for demonstration.

A Cloud and React.js based Social Network with Go

GitHub Repo

- Designed and implemented a social network web app with React.js for users to post and search nearby activities.
- Improved the authentication using token-based registration/login/logout flow with React Router v4 and server-side user authentication with JWT.
- Launched a scalable web service in Go to handle posts and deployed to Google Cloud (Google App Engine).
- Deployed Elasticsearch to GCE to provide search functions for users to find recent posts and list personal posts.

Starlink: React.js based Starlink Trajectory Visualization

GitHub Repo

- Developed a visualization dashboard using React.js and D3 to track satellites in real-time based on geo-location.
- Built location-, altitude-, and duration-based selector to refine satellite search.
- Animated selected satellite paths on a world map using D3 to improve the user friendliness.

Full-stack Development for Personalized News Recommendation with Android

- Designed the Instagram Flavor News app based on Google Component Architectural MVVM Pattern.
- Implemented page navigation using JetPack navigation; utilized RecyclerView to support swipe gestures for likes/dislikes.
- Built the Room Database with LiveData & ViewModel to support local cache and offline model.
- Integrated Retrofit and LiveData to pull the latest news data from a REST endpoint (newsapi.org).

Compiler for COOL (Classroom Object-Oriented Language) in Python

- Designed and implemented a fully-functional, end-to-end compiler in Python for COOL, comprising of lexer, parser, semantic analyzer, and code generator to Cool Assembly.
- Enhanced user experience with detailed error reporting (pinpointing line numbers) and optimization techniques.

SERVICE EXPERIENCE

Vanderbilt Squash Club

Aug. 2020 – May 2024

President

Nashville, TN, USA

- Lead a 40+ member club, standardizing practices and reintroducing participation in inter-scholastic tournaments.
- Initiate partnership with 10+ universities in 3+ tournaments to re-establish consistent tournament routines.
- Procured and managed over \$10,000 in funding to support travel, event hosting, and promotion of squash at Vanderbilt.

Vanderbilt Student Consulting for Nonprofit Organizations

Aug. 2021 – May. 2023

Senior Consultant

Nashville, TN, USA

- Selected as one of thirty-person cohort out of three hundred applicants to provide pro-bono data analytics service for two nonprofit organizations: Conexión Américas and Unscripted Improv.
- Led workstreams of five consultants to establish clients' long-term data infrastructure and complement data overhaul.
- Developed end-to-end CRM infrastructure for collecting, storing, managing, and analyzing clients' performance metrics.

HONORS AND AWARDS

- Vanderbilt School of Engineering Class of 2024 Banner Bearer (graduated top 2 in the School of Engineering).

RELEVANT SKILLS

Machine Learning: Large Language Models (LLMs), Semi-Supervised Learning, Graph Machine Learning, Information Retrieval.

Software Engineering: Full-Stack Web Development, Android Development, Databasing, Software Testing, Software Analysis.

Languages: Python, Java, JavaScript, TypeScript, C++, C, Golang, HTML/CSS, SQL, LaTeX.

Tools: PyTorch, PyG, HuggingFace, LightGBM, React Ecosystem (React.js, Nest.js, etc.), REST API, Spring, Flask, Firebase, MySQL, AWS, Git/GitHub.