Yichen (Eason) Guo

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Santa Barbara, CA, USA

Education

- **University of California, Santa Barbara** — *Sep 2025 – Jun 2026(expected)*
  Exchange Study in Computer Science — Santa Barbara, CA, USA
- **Huazhong University of Science and Technology (HUST)** — *Sep 2022 – July 2026(expected)*
  B.Eng. in Computer Science and Technology — Wuhan, China
  - Core Courses: Data Structure, Computer Organization, Operating System, Computer Networks, Algorithmic Design & Analysis (90), Database Systems (92), Software Engineering (97), Compiler Principles, Functional Programming (98), AI (96), NLP (94), Big Data (95)

Publications & Preprints

- **Auditing Agent Harness Safety**
  Chengzhi Liu, **Yichen Guo***, Yepeng Liu, Yuzhe Yang, Qianqi Yan, Xuandong Zhao, Wenyue Hua, Sheng Liu, Sharon Li, Yuheng Bu, Xin Eric Wang*
  Under review at the Conference on Neural Information Processing Systems (**NeurIPS**), 2026. [arXiv] [Website] [Code] [Dataset]

- **WorldMemArena: Evaluating Multimodal Agent Memory Through Action–World Interaction**
  *Chengzhi Liu, Yuzhe Yang, Sophia Xiao Pu, Yepeng Liu, Lin Long, **Yichen Guo**, Nuo Chen, Zhaotian Weng, Elena Kochkina, Simerjot Kaur, Charese Smiley, Xiaomo Liu, James Zou, Sheng Liu, Yuheng Bu, Songyou Peng, Xin Eric Wang*
  Under review at the Conference on Neural Information Processing Systems (**NeurIPS**), 2026. [arXiv] [Website] [Code] [Dataset]

- **OmniTrace: A Unified Framework for Generation-Time Attribution in Omni-Modal LLMs**
  *Qianqi Yan, **Yichen Guo**, Ching-Chen Kuo, Shan Jiang, Hang Yin, Yang Zhao, Xin Eric Wang*
  Under review at the European Conference on Computer Vision (**ECCV**), 2026. [arXiv] [Website] [Code]

Internship Experience

- **ByteDance** — *Dec 2024 – May 2025*
  Software Engineer (full-time, 50hr/wk) — Beijing, China
  - Developed an in-house web IDE based on OpenSumi (3.6k+ ★) to replace the legacy front-end editor, which served 1,800+ ML engineers
  - Resolved a core type-checking bug in the OpenSumi debug module (PR #4450) that caused runtime behavior to differ from VS Code; the fix was officially merged and released in v3.9.0, achieving behavioral parity with VS Code
  - Designed a Node.js monitor service to track CPU, GPU, and disk usage; applied multi-point sampling and mean filtering strategy to improve CPU utilization measurement accuracy by 55.3%, enhancing real-time feedback within IDE containers
  - Modified OpenSumi terminal modules to enable real-time and incremental log display; reduced latency by more than 70% during model compilation and debugging

Research Experience

- **UCSB ERIC Lab, UCSB NLP Group, University of California, Santa Barbara** — *Oct 2025 – Present*
  Supervisor: Prof. Xin (Eric) Wang — Research Intern
  - Built a Playwright-powered DOM grounding expert atop Agent-S3 (10.9k+ ★)'s Mixture-of-Grounding stack to replace the UI-TARS visual pipeline; boosted end-to-end interaction success rate from 12.5% to 100% while slashing latency by $\sim$210$\times$ (5.7s $\rightarrow$ 27ms) to achieve real-time execution
  - Engineered a unified multimodal pipeline utilizing Qwen2.5-Omni-7B and MiniCPM-o-4_5 to execute complex summarization and QA reasoning tasks across the large-scale MISP-Meeting and MMAU datasets
  - Architected a novel attention-based source attribution algorithm that maps generated responses to precise temporal ranges, achieving zero-shot multimodal grounding without relying on external embedding models

- **Darko Marinov's Research Group, University of Illinois Urbana-Champaign** *Jul 2024 – Aug 2024*
  Supervisors: Prof. Darko Marinov, Prof. Reyhaneh Jabbarvand Research Intern
  - **Contributed experimental results to the paper:** Revisiting Test-Case Prioritization on Long-Running Test Suites (*ISSTA 2024*)
  - Architected and implemented a statistical significance testing module in pure Python, achieving 3.1x greater scalability (81+ comparison groups) over standard R implementations (26-group limit)
  - Optimized the analysis pipeline by eliminating cross-language dependencies, reducing the Docker image size by 45% (200MB) and enabling analysis of 59 TCP techniques across 57K+ test suite runs.
  - Developed a novel Compact Letter Display algorithm and the precise Tukey-Kramer adjustment to automatically categorize techniques by significance ($p<0.05$), directly validating the paper's central finding.

Selected Projects

- **AI-powered Full-stack PCB Defect Detection System** *Aug 2024 – Nov 2024*
  19th National Challenge Cup for College Students - Huawei Cloud Track [GitHub]
  - Developed an end-to-end PCB defect detection system integrating YOLOv9, Huawei ModelArts, and a Flask backend; achieved 46.05% mAP@50-95 on 5 defect categories, enabling real-time mobile detection via HarmonyOS
  - Designed a dual-inference architecture combining cloud (ModelArts API) and local (YOLOv9) engines, boosting system availability by 38% under unstable networks through automatic failover
  - Built a low-latency video streaming module using FFmpeg and WebSocket to achieve 360ms local delay and 99.03% uptime; converted RTSP feeds to FLV enhanced real-time visual monitoring for production-line quality control
  - Awarded top national recognition among 400,000+ entries; validated by Huagong Laser and endorsed by Distinguished Professor Jin Hai (Chang Jiang Scholar)

- **Unique Studio HR Platform** *Mar 2024 – May 2024*
  Individual Project at Unique Studio [GitHub]
  - Architected a recruitment management system serving 600+ users to optimize hiring processes for the technology teams; successfully facilitated three full recruitment cycles while creating 36+ reusable components and replacing redundant watchers with a centralized event bus (mitt) to boost UI response speed by 15-25%
  - Built a real-time analytics dashboard using ECharts with 5 custom chart types (pie, treemap, etc.) to visualize applicant distribution and funnel progression, enabling data-driven hiring decisions
  - Modeled the 8-step recruitment process as a client-side state machine; developed a dynamic notification system with 6+ templates, and managed complex multi-team interview scheduling

Technical Skills

- **Programming Languages:** TypeScript, JavaScript, Python, C/C++, LaTeX, ArkTS
- **Frameworks:** PyTorch, React.js, Vue.js, Next.js, Flask, Django
- **Development Tools & Platforms:** Linux, Git, Docker, Kubernetes, OpenSumi

Honors and Awards

- **National Scholarship, Second Prize** *Oct 2025*
  (Award Rate: Top 4%) Ministry of Education, China
- **National Scholarship, Third Prize** *Dec 2024*
  (Award Rate: Top 9%) Ministry of Education, China
- **National Second Prize** *Dec 2024*
  (Award Rate: Top 3.1%) 6th Global Campus AI Algorithm Elite Competition
- **National Grand Prize** *Nov 2024*
  (Award Rate: Top 0.03%) 19th National Challenge Cup - Huawei Cloud Track