taufiq.daryanto@gmail.com
taufiqhusada.github.io

Taufiq Daryanto

Blacksburg, VA, USA
+1 (540) 566-8009

Education

Virginia Tech — Blacksburg, VA, USA
M.S in Computer Science, GPA: 4.0/4.0. Expected Graduation: Dec 2025 — *Aug 2023 – Dec 2025*

Institut Teknologi Bandung (ITB) — Bandung, Indonesia
B.S in Computer Science, GPA: 3.84/4.0 — *Aug 2018 – July 2022*

Experience

Virginia Tech — Blacksburg, VA
Graduate Student Researcher — *Aug 2023 – Present*

- Researched human-AI interaction for career preparation and future work with AI in software engineering.
- Developed a multimodal coding interview platform integrating LLMs, text-to-speech, and speech-to-text models to support think-aloud practice. Built using Python, Flask, Vue.js, and TypeScript.
- Implemented a conversational AI for interview preparation leveraging LLMs, grounded in reflective learning and dialogic feedback theory. Designed interactions to engage users as active learners in human-AI collaboration.
- Built an LLM-based debugging tool for identifying production issues from logs and codebases using retrieval-augmented generation (RAG). Built using Python, Flask, LangChain, Vue.js, Graylog.
- Developed a multi-turn evaluation framework for LLM-facilitated, role-play-based communication practice. Simulated multi-turn interactions with user personas and implemented an LLM-as-a-judge.

Shopee — Jakarta, Indonesia
Backend Software Engineer — *Sept 2022 – July 2023*

- Developed 30+ backend APIs in Shopee e-commerce using Golang, MySQL, Redis, and Kafka.
- Led backend development for 3 new major features. Collaborated with the tech lead, product owner, and senior engineers on architecting API designs and system designs for new projects and presented them to 15+ employees.
- Developed ads integration and leaderboard features in an in-app game, increased the game revenue by over 100%.
- Implemented a push notification feature using Kafka, re-engaging churned users by sending personalized messages.
- Migrated a large scale application from Google Cloud Platform (GCP) to an internal cloud system.
- Developed scripts to migrate 100,000+ users' data concurrently using batch processing and lock mechanism.
- Optimized SQL and Redis queries in a backend application to reduce latency.
- Mentored one junior engineer in the team, providing guidance on technical implementation and project knowledge.

Boston University — Boston, MA (Remote Work)
Machine Learning Research Assistant (Remote) — *July 2020 – Aug 2022*

- Collaborated with researchers on projects about NLP and machine learning, advised by Prof. Derry Wijaya.
- Co-authored two research papers on NLP and machine learning, published in EMNLP and NLPI conferences.
- Developed transformer-based models for multimodal news framing text classification using fine-tuning techniques.
- Implemented machine learning pipelines focused on explainable AI to generate referring expressions from images, using computer vision and NLP techniques. Developed the solution with Graph R-CNN, Detectron2, and T5.
- Developed ML models to analyze 10 years of news data, aiming to understand racial stereotypes in media.

Traveloka — Tangerang, Indonesia
Backend Software Engineer Intern — *Aug 2021 – Jan 2022*

- Led a project migration initiative within a team, collaborating with senior engineers to develop guidelines for migrating a NodeJS-based app to AWS based on company standards.
- Deployed several applications to AWS using Docker and Terraform. Implemented a CI/CD pipeline with CodeBuild, CodeDeploy, and CodePipeline, and set up ECR and ECS-Fargate.

Skills

Programming Language: Python, Golang, Java, C, C++, JavaScript, TypeScript.

Technologies: VueJS, NodeJS, Flask, Spring, Scala, Spark, SQL, MySQL, PostgreSQL, MongoDB, Git, Amazon Web Service (AWS), Terraform, Docker, Redis, Kafka, PyTorch, Scikit-learn.

Areas of Expertise: Machine Learning, Software Development, Backend Engineering, Web Application Development, Data Science, Artificial Intelligence, Human-Computer Interaction.

Publications

- **Daryanto, T.**, Ding, X., Wilhelm, L., Still, S., Knutsen, K., and Rho, E. (2025). Conversate: Supporting Reflective Learning in Interview Practice Through Interactive Simulation and Dialogic Feedback. *The ACM International Conference on Supporting Group Work (ACM GROUP) 2025.*
- Tourni, I., Guo, L., **Daryanto, T.**, Zhafransyah, F., Halim, E. E., Jalal, M., ..., and Wijaya, D. T. (2021). Detecting frames in news headlines and lead images in US gun violence coverage. *Findings of the Association for Computational Linguistics (ACL): 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP).*
- **Daryanto, T.**, and Khodra, M. (2022). Indonesian AMR-to-Text Generation by Language Model Fine-tuning. *2022 9th International Conference on Advanced Informatics: Concepts, Theory and Applications (ICAICTA).*
- Le, H., **Daryanto, T.**, Zhafransyah, F., Wijaya, D., Coppock, E., and Chin, S. (2022). Referring expressions with rational speech act framework: A probabilistic approach. *2022 2nd International Conference on NLP and Information Retrieval.*

Course Projects

- **Visualizing News Narrative for Data Exploration**: Developed a tool to visualize news narratives about COVID-19. Applied UMAP to project news embeddings into a 2D space and performed clustering, then visualized the narrative paths among the news. The tool was developed using JavaScript and D3.js.
- **Analyzing Presidential Debates**: Analyzed dialogue acts in U.S. presidential debates (2012–2024) by leveraging few-shot prompting with GPT-4, enabling classification of dialogue acts and uncovering patterns in debate transcripts.
- **AI-Assisted Production Debugger**: Developed an LLM-based debugger using retrieval-augmented generation (RAG) and human-in-the-loop approach to debug production issues based on logs and codebase. Built with Python, Flask, LangChain, Vue.js, Graylog, TypeScript, HTML, and CSS.

Honors & Awards

- **Best UT Prosim Hack at VTHacks11**: Won a hackathon at Virginia Tech with over 600 participants. Built an LLM-based application leveraging GPT-4 and the YouTube API to recommend videos and generate learning content.
- **ICPC Mid-Atlantic USA Regional (2023)**: Top 25 in the division 1 regional competitive programming contest.
- **ICPC Asia Jakarta Regional (2018, 2020, 2021)**: Finalist at Southeast Asia level programming competition.
- **Top 100 Global, IEEExtreme Programming Competition**: Placed at 89 out of 3700+ participants at international level competitive programming competition, held by IEEE.
- **Top 12 Global Finalist in EY Data Challenge**: An International Data Science competition. Selected as a global finalist out of 8700+ participants. Implemented algorithm to predict fire behavior in forest fire using Python.