

## EDUCATION

---

### Virginia Tech

*Ph.D in Computer Science, GPA: 4.0/4.0*

Blacksburg, VA

*Aug 2023 – May 2028*

### Institut Teknologi Bandung (ITB)

*B.S in Computer Science, GPA: 3.84/4.0*

Bandung, Indonesia

*Aug 2018 – July 2022*

*Awarded "Most Outstanding Student" in Computer Science (1st/150)*

## EXPERIENCE

---

### Virginia Tech

*Graduate Student Researcher*

Blacksburg, VA

*Aug 2023 – Present*

- Developed a multimodal coding interview practice platform integrating LLM, text-to-speech, and speech-to-text models to facilitate think-aloud practice for coding interviews. Built with Python, Flask, Vue.js, TypeScript.
- Developed an LLM agent to debug production issues based on the log and codebase using retrieval-augmented generation (RAG) and a human-in-the-loop approach. Built with Python, Flask, LangChain, Vue.js, Graylog.
- 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.
- Visualized news narratives using graph-based visualization for data exploration. Applied UMAP to project news embeddings into a 2D space, performed clustering, and visualized narrative paths to understand the storyline across the news. Built with Python, D3.js, JavaScript

### Shopee

*Backend Software Engineer*

Jakarta, Indonesia

*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 to develop API designs and system designs for new projects and presented them to over 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

*Machine Learning Research Assistant (Remote)*

Boston, MA (Remote Work)

*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

*Backend Software Engineer Intern*

Tangerang, Indonesia

*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.

## 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*.

## 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, IEEEExtreme 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.