Devin Ersoy

Graduate Student, Department of Computer Science
Purdue University, West Lafayette, IN, USA

linkedin.com/in/devinersoy
dersoy@purdue.edu
765-398-7150

Education

Master of Science in Computer Science **Aug 2022 - May 2024**
Purdue University *West Lafayette, IN, USA*
- GPA: 3.83 / 4.0
- Relevant Courses: Operating Systems, Advanced Algorithms, Software Engineering, Database Systems, Information Security, Cloud Computing, Computer Networks, Software Testing

Bachelor of Science in Computer Science **Aug 2018 - May 2022**
Purdue University *West Lafayette, IN, USA*
- GPA: 3.85 / 4.0
- Relevant Courses: Systems Programming, Algorithms, Programming in C, Calculus, Linear Algebra, Statistics, Information Systems, Computer Architecture

Technical Skills

Software Experience: Programming Languages: Assembly, AWS, C, C++, Datadog, Docker, Firebase, Flask, Go, Heroku, HTTP, Java, Kubernetes, JavaScript, Linux, Terraform, MongoDB, Neo4J, Python, React, REST, SQL, Websocket
Languages: English (Native), Turkish (Fluent), Norwegian (Fluent), German (Basic)

Professional Experience

Cloud Development Engineer **May 2024 - Present**
Philips Hue *Menlo Park, CA*
- In progress work on Google home integration for Hue integrated devices.

Graduate Teaching Assistant **Jan 2023 - Present**
Purdue University *West Lafayette, IN, USA*
- Created assignments, managed administrative tasks, and mentored students for two courses: Software Testing (Spring 2023) and Software Engineering (Fall 2023).
- Assessed, monitored, recorded, and reported on student learning needs, progress, and achievements.

IoT Software Engineer Intern **Jun 2023 - Aug 2023**
Philips Hue *Menlo Park, CA*
- Engineered Golang Philips Hue Sync Box Alexa Skill integration that has been deployed worldwide.
- Created API Gateway, Lambda, DynamoDB and CloudWatch resources and IAM policies in AWS with Terraform.
- Implemented Observability as Code for Datadog, enhancing team awareness of product performance.
- Utilized AWS SAM and LocalStack to test and configure IAM policies and AWS resources.

Software Engineer and Researcher **Aug 2020 - Aug 2022**
Superbrain Securities *New York City, NY*
- Led team in a startup company focused on development of algorithms for financial analysis and stock prediction, leading to profits by applying algorithms to real-time trading.
- Researched algorithms for stock trading and portfolio management through machine learning.
- Developed financial analysis and stock prediction app, integrating React/JS, Python/Flask, PostgreSQL.
- Managed Docker containers for development and production workflows to streamline development processes.

Undergraduate Teaching Assistant **Dec 2019 - Sep 2021**
Purdue University *West Lafayette, IN, USA*
- Served as a TA in four courses: Python Object-Oriented Programming (Spring 2019 and Fall 2019), Programming in C (Spring 2020), Computer Architecture (Summer 2020), and Programming in Java (Fall 2021).
- Proctored lab sessions and held office hours to help students, graded homework and labs, and answered student questions on Piazza forum.

Curriculum Developer **Jun 2020 - Aug 2020**
Purdue University *West Lafayette, IN, USA*

- Designed homework assignments, and labs in Data Structures and Algorithms course.
- Tested code in three projects with JUnit tests to uncover fatal bugs before launch.

Research Activities

Research on LLM Security and Privacy   December 2023 - Present
- In progress, research under Prof. Berkay Celik on security and privacy of LLMs (Large Language Models) such as ChatGPT.
- Investigated the use of LLMs in real-world systems and their potential security and privacy vulnerabilities.

Performance Based Study on Monolithic v. Microservice Architecture August 2023 - December 2023
- In progress, research on performance of monolithic and microservice architecture in a real-world system.
- Disaggregated web application backend from Monolith to Microservices using Docker and Kubernetes.
- Compared AWS EKS deployment performance to AWS EC2 Monolithic deployment.

Mediating Human Debates: Robotic Interventions HRI Study   August 2023 - Present
- In progress, research on use of a robot (Furhat) as a mediator in human debates.
- Built a web app to collect and aggregate data from participants in study with jQuery and Python Flask.

Epoch Based Databases in Real World Systems   Jan 2022 - May 2022
- Analyzed the utilization of epoch-based databases in real-world scenarios.

Machine Learning Testing: Survey, Landscapes, and Horizons   Jan 2022 - May 2022
- Conducted an in-depth investigation and delivered presentations on machine learning systems for Software Engineering.

Projects

Bug Finder   Jan 2023 - May 2023
- Programmed a Java program analyzing machine code to pinpoint potential bugs with a specified degree of confidence.
- Executed Coverity on machine code to further investigate potential bugs.

Paging   Aug 2022 - Dec 2022
- Implemented paging support for the XINU Operating System on the Intel architecture, Graduate OS Project.

TrackWrapped App   Jan 2022 - May 2022
- Developed app for tracking and analyzing metrics from different sources using React, Go, D3, MongoDB, Docker, and Vercel.
- Integrated data sources including Fitbit and Strava to build advanced charts within app.

Shell   Aug 2021 - Dec 2021
- Coded custom Lexer, Parser, and shell command line interpreter for Linux operating systems with C++, bash, and assembly.
- Implemented wild cards, elimination of zombie processes, pipes, process creation, execution, and file redirection.

Circle App   Aug 2020 - Dec 2020
- Built interactive social media app for college students to share class material using React/JS, MongoDB, Python/Flask, Heroku, and Azure DevOps.
- Led team of four with SCRUM methodology, leading to better organized and efficient workflow.

Hobbies and Activities

Travel
- Traveled to many countries, immersing myself in different cultures and exploring ways of life.

Filmmaker/Youtuber
- Created videos about Computer Science and other topics explained in a clear and understandable manner at youtube.com/@devinersoy.

Study Abroad Program
- Aided in Purdue Study Abroad course by proctoring exams and handing out assignments (SA 10503 Machine Learning and Pattern Recognition).

Personal Knowledge Management (PKM)

- Researched and utilized PKM tools such as Obsidian, Zotero, and Anki to streamline process of learning, retaining, and publishing Computer Science knowledge. Example: publish.obsidian.md/algo.