

TYLER CHENG

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EDUCATION

The Pennsylvania State University

Bachelor of Science in Computer Science and Economics

University Park, PA

August 2022 – May 2026

- **Relevant Coursework:** Artificial Intelligence & Machine Learning, Object-Oriented Programming, Data Structures & Algorithms, Operating Systems, Computer Organization, Programming Language Concepts, Technical Writing

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, C/C++, Swift, Java, Go, Helm, React, AngularJS, Node.js, SQL, Assembly, R, Racket

Technologies: Azure, Google Cloud Platform, Amazon Web Services, Kubernetes, Docker, RESTful API, PyTorch, Kernel, Linux

Interests: Cloud, Machine Learning, Deep Learning, Artificial Intelligence, Retrieval-Augmented Generation, Embedded Systems

EXPERIENCE

IBM | Watson

Generative AI/ML Intern

Winter 2024

San Jose, CA

SAP | Security Automation

Software Engineer Intern

May 2024 – Current

Newtown Square, PA

- Designed, built, and deployed a Dockerized security scanner to AWS ECS, creating reusable Terraform modules for scalable infrastructure. Automated scans and ensured compliance with SSL permissions, streamlining security for 500+ products
- Reduced compute and storage costs by 20% by optimizing log management, eliminating redundancies, and refining scan processes, resulting in more efficient utilization of AWS ECS logs and HANA database storage, handling 10k+ logs per run
- Refactored a Java vulnerability testing script to Python; improved scanning speed by 32% over 10,000+ lines of businesses
- Created a Go CLI using Cobra to automate 27 manual tasks, enhancing efficiency throughout SAP's internal services
- Architected an app for automating security.txt file scans using a Kubernetes server to derive security vulnerability costs

The Pennsylvania State University | College of Engineering

AI/ML Research Assistant

May 2023 – Current

University Park, PA

- Implemented regularization on a regression model to prevent overfitting, predicting values within $\pm 5\%$ of actual counts
- Utilized transformers to predict trends in data, resulting in optimized model performance and a prediction rate of 94%
- Developed a 97% accurate deep neural network to predict ridership numbers on a 25 dimensional feature set

Tesla Government | Geospatial Services

Full Stack Development Intern

June 2023 – August 2023

McLean, VA

- Integrated java.utils settings into a streamlined import mechanism, enhancing code organization across 57 repositories
- Leveraged Docker to containerize and efficiently manage 3 React web applications, reducing deployment times by 30%
- Increased code coverage to 65% in the JWT authentication module through unit tests using JUnit5 and Mockito

The Pennsylvania State University | College of Engineering

Teaching Assistant

January 2022 – May 2022

University Park, PA

- Instructed a group of ~100 students on data structures and algorithms by designing a complete course curriculum
- Evaluated over 1,000 submissions, providing extensive personalized feedback, to encourage reusable and robust code
- Offered personalized support to students on 6 projects and 10 labs, resulting in a 5% grade improvement

Mineplex | Map Deployment and Integration

Developer

January 2018 - May 2021

Chicago, IL

- Co-founded Mineplex, the world's largest official Microsoft partnered Minecraft server, which supported over 100k concurrent players and 50 million unique players, and became one of the most popular and influential Minecraft networks
- Architected a procedural generation system utilizing metadata-encoded objects to define game mechanics, including spawn points, boundaries, and event triggers, enabling non-technical staff to push maps with automated deployment
- Enhanced scalability by standardizing map design enabling faster map parsing and reducing manual configuration across 50+ game modes, supporting rapid integration of new maps as the server scaled to 100k+ concurrent players

PROJECTS

Jobship

March 2024 – May 2024

- Led the design and implementation of tag normalization techniques using RAG within the internship aggregation platform
- Utilized GraphRAG in Google's Gemini API to fetch and present relevant internship postings based on NLP-derived tags
- Developed a frontend using React and Vite, displaying relevant internship postings based on extracted key information