

# Zack O'Rourke

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## EDUCATION

### The College of New Jersey

*Bachelor of Science in Computer Science, Minor in Finance*

– GPA: 3.7 — Dean's List (6/6) Semesters

Ewing, NJ

*Aug. 2022 – May 2026*

## EXPERIENCE

### PSEG Software Engineer Intern

June 2024 – August 2024

*Edison, NJ*

- Developed and implemented a Python script using Selenium and PyQt5 to automate the extraction and comparison of configuration settings across production and test environments. Streamlined the process of identifying discrepancies, significantly reducing manual effort and enabling my team to quickly pinpoint and resolve issues, improving overall debugging efficiency by 50%.
- Collaborated with other interns to create a comprehensive full-stack Intern Knowledge Base for future interns, utilizing HTML, CSS, React.js, and Git.
- Conducted data resets in testing environments using PuTTY and WinSCP, troubleshooted incidents across interfaces like SAP, Mulesoft, Kubra, and EITK scripts, and implemented production changes through ServiceNow.

### TCNJ Web3 and Crypto Currency Mentored Research Assistant

August 2023 – Present

*Ewing, NJ*

- Led research meetings to educate students on cryptocurrency fundamentals, including consensus mechanisms and blockchain technology, fostering a deeper understanding of the field, with plans for publication on Crypto slashing.
- Engineered a Python program to simulate crypto slashing for research publication, processing over 1,000 transactions per second to analyze the impact of slashing on network security and consensus algorithm efficiency.

### TCNJ Computer Science Peer Tutor

August 2023 – Present

*Ewing, NJ*

- Led and mentored 30+ computer science students through advanced OOP concepts, resulting in 90% assignment completion rate and 40% improvement in project scores

## PROJECTS

### DevOps Portfolio Website | *React, Three.js, Docker, Terraform, GitHub Actions, Nginx, OCI*

- Architected and deployed a production-grade portfolio website using DevOps practices, featuring automated CI/CD pipeline with GitHub Actions that builds, tests, and deploys to Oracle Cloud Infrastructure on every commit to main.
- Implemented Infrastructure as Code using Terraform for OCI provisioning, containerized the React application with Docker Compose, and configured Nginx reverse proxy with SSL termination using certificates for secure HTTPS deployment.
- Achieved zero-downtime deployments through container orchestration and automated rollback capabilities, demonstrating scalable cloud architecture with security hardening, SSH key authentication, and environment-specific configurations.

### Leetcode AI Assistant | *React, OpenAI API, Node.js*

- Developed an interactive web application to enhance interview preparation by presenting users with interview questions and integrated AI-powered assistance for real-time guidance.
- Designed a dynamic post-question quiz feature to reinforce learning. Collaborated with team to refine user experience, achieving an intuitive, adaptive interface aimed at maximizing user engagement and skill improvement.

### Full Stack Database Visualizer | *PostgreSQL, Express.js, Chart.js, HTML, CSS*

- Developed and implemented a full-stack database management system for a stakeholder in Oregon, supporting their goat ranch operations. Designed the database schema, imported data from CSV files, and developed a REST API for dynamic querying of the database. Enabled users to view and filter goats based on various criteria and access specific notes for each goat.

## TECHNICAL SKILLS

**Languages:** Python, Java, HTML, CSS, JavaScript, Solidity

**Tools & Frameworks:** Git, GitHub, VS Code, Flask, Django, BeautifulSoup, Node.js, Express.js, Chart.js, React.js, SQL, PostgreSQL, MongoDB, AWS DynamoDB, Cognito, Lambda, S3, API Gateway, CloudFront, Docker, Terraform, Nginx, GitHub Actions

## ACTIVITIES, AWARDS & CERTIFICATES

**HackTCNJ - President**

**Digit.ALL - Media Manager**

**UPE Computer Science Honors Society - Secretary**

**Computer Science Sophomore of the Year Award**

**AWS Cloud Practitioner Certificate**