Zaki Machfj

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EDUCATION

Bachelor of Computer Science | University of Waterloo   September 2020 - May 2025
- Coursework: Data Structures, Algorithms, Operating Systems, Databases, Numerical Computation, User Interfaces

WORK EXPERIENCE

Backend Developer Intern - Deliverect   September 2023 - Present
- Overhauling the existing payment system to support multiple payment options on the core product for 20,000 clients
- Developing a REST API with Python, Flask, writing tests with Pytest and integrating Kafka for real-time data processing

Software Developer Intern - Empire Life   January 2023 - May 2023
- Deployed a Python script and a CI/CD pipeline using AWS CodePipeline to automate the approvals of insurance advisors, decreasing admin access to the dashboard by 90%
- Developed a Django REST API and frontend features with React and Typescript, reducing the time required for internal advisors to authorize client insurance claims by 65%
- Built and deployed backend features for a web app using Django and Docker, allowing clients to manage their MFA enrollment and factors, leading to a 45% increase in MFA adoption from existing users

Software Developer Intern - Dejero Labs   May 2022 - August 2022
- Led the development of a new 2-Factor API with PostgreSQL and Rails, leading to 2,000 new client MFA enrolments
- Migrated existing MongoDB drivers from Ruby to Go, reducing latency times by over 500% to less than 100 ms
- Designed and implemented a reusable tooltip component using Angular to improve page accessibility/responsiveness

Software Developer Intern - Quill Podcasting   May 2021 - August 2021
- Created user-facing graphs with React and TypeScript to visualize clients' podcast analytics and retention metrics
- Built a custom podcast player with React and TailwindCSS from existing Figma design mockups for 40 new clients
- Designed automated tests using Selenium and Jest, increasing the company's web app test coverage by 12%

PROJECTS

UW Watonomous - Autonomous Vehicle
- Modeled and trained a cognitive neural network for an autonomous vehicle in Pytorch, built on ResNet
- Wrote data preprocessing and augmentation scripts for 210,000 images in Python to train a real-time image classifier
- Conducted perception research to perform traffic sign detection via transfer learning using PyTorch and a YOLOv5 model

ChessRecommender - Chess Opening Recommender
- Developed a recommendation algorithm to suggest openings to users based on previously played openings
- Implemented collaborative filtering and cosine similarity using Jupyter Notebook, Numpy and Pandas on a Kaggle dataset of 30,000 games and chess openings

SKILLS

- Languages: Python, C++, JavaScript, TypeScript, Go, SQL
- Technologies: React, Node, Django, Flask, Docker, AWS, PostgreSQL, Numpy, Pandas, PyTorch