Tirth Patel

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Skills

Core Languages: (Python, Javascript, Java, Golang, C/C++, SQL, PHP, Solidity, MATLAB, Bash)

Tools/Frameworks: (AWS, Django, Docker, Ethereum, Flask, Flutter, Git, GCP, gRPC, MongoDB, Node/Express, PostgreSQL, React)

Professional Experience

Blockchain Engineer, *Dandelion Networks | Golang, gRPC, Docker, Solidity* 05/2022 – present
- Achieved **250,000+** transactions per second using **Golang** by implementing a custom node validation mechanism
- Leveraged **Docker** to containerize blockchain nodes to allow for easy deployment and scalability of **P2P** network
- Utilized **gRPC** and **protobuf** to develop efficient, scalable, and secure blockchain services that effectively cater to diverse use cases

Software Engineer, *Alert Driving | PHP, PostgreSQL, Javascript, DBeaver* 01/2022 – 04/2022
- Reduced **64%** of server complaints by leading the automation of an audit log using **PHP**, **JavaScript**, and **MySQL**
- Created several full-stack components for an internal dashboard using LAMP (**Linux, Apache, MySQL, PHP/Python/Perl**) stack
- Sped up tasks by **50%** for the Business Team by automating the transfer of global client data across various spreadsheet suits
- Saved **20 minutes per doc** by developing live **HTML** to PDF **API** endpoints, providing up-to-date PDF reports for users

Software Engineer, *University of Waterloo | Python, C++, MySQL, Office 365* 09/2020 – 04/2021
- Significantly reduced grading time by **650%** by coding an openpyxl **Python** script with **MySQL**, scheming ~**500** students' final grades
- Vigilantly detected **3** vulnerabilities in MOSS (plagiarism detection software for code) by creating **C++** and **Python** exploits

Software Engineer, *Lumentum | Amazon RDS, S3, C#, VB.NET, Python, SQL* 01/2020 – 04/2020
- Saved **$12,000 / quarter** by spearheading the design of an operational KPI dashboard from scratch with **C#, Azure, SQL, JMP, JSL,** and **Python** which processed and visualized batch data for laser optics; collaborated with **11+** other product/test engineers
- Boosted unit-search operation speed by ~**70%** by refactoring algorithms and data processes in **VB6** and **SQL**
- Optimized runtime complexities from **O(n^2) to O(n)** of internal **Amazon RDS** calls, speeding up common tasks by **3x**
- Used **Amazon S3** to build an end-to-end log analytics solution that collects and loads both batch and streaming data
- Successfully designed and integrated **Scrum/Agile** methodologies with **CI/CD** pipelines using Infrastructure as Code **(IaC)** principles

Data Analyst, *McCain Foods | Python, SAS, Excel* 05/2019 – 08/2019
- Cut downtime by **22.5%** by programming a performance monitoring system using **Python** and **Excel**
- Improved first-time yield by **3%** using **Python** for data processing on batch data; aggregated **+10,000** food data points per day

Projects

Blockchain Based Discord Clone, *Decentralized App | Solidity, ReactJS, Node* 04/2023
- Leveraged **Solidity** and Hardhat to create smart contracts that utilized NFTs for memberships, allowing users to join specific channels on the Discord clone platform, with transactions being executed through the Metamask wallet
- Utilized **JavaScript, web3.js, ReactJS,** and **Node.js** to add interactivity/functionality to the dApp, ensuring a seamless UX
- Employed **Socket.io** to create a real-time, chat-based platform that could easily handle **1500+** users

NML.ai, *Startup | Keras, SQLAlchemy, PyQt5, Raspberry PI* 05/2022 – 05/2023
- Semi-finalists (1 of 6) for **RBC Pitch Competition;** awarded $500 in prize
- Achieving **92.5%** success using **Machine Learning** and **OpenCV** to detect dental cavities with infrared light, powered by **Raspberry PI**
- Implemented **SQLAlchemy** for storage of patient data

AI NFT Generator, *Decentralized App | ReactJS, Solidity, Node, Ethereum* 01/2023
- Designed a **ReactJS** UI and **Solidity** smart contracts to make a user-friendly, decentralized app that uses **AI**-generated art to mint NFTs
- Utilized **web3.js** for interacting with the **Ethereum** blockchain, MetaMask for secure user interaction, **Node.js** for building a backend server that communicated with blockchain and **AI** APIs, and IPFS for NFT storage, resulting in a fully functional and reliable platform

Triangular Arbitrageur, *Crypto Arbitrage Bot | Python, REST, Uniswap V3* 10/2022
- Achieved instant **1.5% ROI** by building a custom triangular arbitrage bot with **Python** and **REST APIs**; leveraged real-time market data
- Tuned advanced trading patterns (BUY-BUY-SELL/BUY-SELL-SELL) to exploit inefficiencies across both CeFi & DeFi exchanges

Pushup Form Checker, *Hack the North | Google Cloud, Flask, Firebase, Python* 09/2021
- Utilized **Flask API** on **GCP** to fetch real-time position data from accelerometer and gyroscope, and **Firebase** to host our web app

Education

Bachelor of Applied Science, Nanotechnology Engineering, 09/2018 – 04/2023
University of Waterloo
- Relevant courses: Data Structures and Algorithms, Cryptography and System Security, Computer Networks, Computational Methods, Machine Learning A-Z, Statistics, Ethical Hacking