Mitchell Elliott

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Santa Cruz, CA 95060

EDUCATION

University of California, Santa Cruz Sept. 2018 – Jun. 2022
B.S. Computer Science GPA: 3.61

- **Coursework**: A.I., Algorithms, Assembly Language, C Programming, Compiler Design, Computer Architecture, Computational Models, Computer Networks, Computer Security, Computer System Design, Data Structures, Database Design, Distributed Systems, Embedded Operating Systems, Functional Programming, Network Programming, SQL, Web Applications
- **Achievements**: UCSC Dean's List (>3.74 quarterly GPA) in Fall 2019, Winter and Spring 2020

University of California, Santa Cruz Sept. 2022 – Jun. 2024 (Expected)
M.S. Computer Science

- **Coursework**: Advanced Operating Systems, Analysis of Algorithms

SKILLS

General: DevOps, CI/CD, UI/UX, CloudOps, Full Stack Development, Systems Programming, IT, Data Analytics, Agile, Scrum
Languages: Python, C, C++, Java, JavaScript, Bash, Git, SQL, NoSQL, HTML, Latex, MIPS, Perl, JSON, YAML, NRQL, DAX, CSS, Go, OCaml, PHP, Scheme, Smalltalk, RISC-V
Frameworks: Bottle, Bulma.css, Flask, Py4Web, Vue.js
Applications and Tools: Docker, Kubernetes, Word, Excel, PowerPoint, Power Apps, Power Bi, SSMS, MS Teams, Slack, MySQL Workbench, Okta, Auth0, Apache, Nginx, Jira, New Relic, Jenkins, Sourcetree, Kafka, WordPress, VirtualBox, Ghidra, MMLogic
Databases: MySQL, PostgreSQL, SQL Server, SQLite, Redis, Cassandra, Elasticsearch, MongoDB
IDEs: Sublime Text, Visual Studio, VSCode, Eclipse, Xcode, PyCharm, CLion, Conda, Matlab, Terminal, Vim
AWS: EC2, RDS, S3, Boto3, API Gateway, Lambda, VPC, IAM, Elastic Beanstalk, Lightsail, ECS, EKS, ELB, Route 53, VPN, ACM
Operating Systems: MacOS, Windows, Linux, Ubuntu, CentOS, Kali Linux, Fedora, FreeBSD, Raspberry Pi OS

EXPERIENCE

ParkourSC, Inc. Jul. 2022 – Sept. 2022
DevOps Engineer Intern Remote

- Redesigned and implemented new alert condition policies for several Kubernetes clusters in New Relic
- Eliminated false positive alert tickets, which increased engineer productivity and allowed for critical alerts to have higher visibility
- Created a Jira automation to mute all New Relic alerts for a cluster during an upgrade using the New Relic NerdGraph API
- Analyzed log files, viewed alert incident data, and wrote NRQL queries to investigate cluster outages
- Wrote a Bash script to filter the list of New Relic APM agents that could be used as data sources for the alert conditions
- Used Source Tree to push code to production and Jenkins to deploy changes on New Relic

UC Santa Cruz Apr. 2022 – Jun. 2022
Undergraduate Course Tutor Santa Cruz, CA

- Tutor for CSE 130: Principles of Computer System Design
- Course covers topics such as memory, storage, and networking, concurrency and synchronization, layering, naming, client-server and virtualized system models, and performance
- Helped students solve problems and debug code in programming assignments
- Reviewed course material and taught useful programming and debugging techniques to students

uLab Systems, Inc. Jun. 2021 – Sept. 2021
Software Engineer Intern San Mateo, CA

- Migrated a WordPress website from Amazon Lightsail to EC2
- Designed and implemented a three-stage pipeline to streamline development and testing
- Created a secure private network to authenticate users and filter out unwanted web traffic
- Wrote AWS CLI/API Python scripts to sync data and automate the code pipeline
- Wrote an SQL script to sync over 1000 user accounts between two core services

Nevtec, Inc. Jun. 2020 – Sept. 2020
Data Analyst Intern San Jose, CA

- Used Power BI, SQL Server Management Studio (SSMS) and ConnectWise Manage to organize and display data
- Analyzed service ticket data to measure engineer performance and compare customer IT requests
- Continued development on the data analytics app built during the previous internship term
- Built dashboards to highlight key data points, including ticket response and closing times, number of billable hours and project time utilization

Nevtec, Inc. Jun. 2019 – Sept. 2019
Data Analyst Intern San Jose, CA

- Created a real-time ticket monitoring system using Power BI and SQL to display data from a ConnectWise database in a graphical and user-friendly form
- Wrote Power BI Data Analysis Expressions (DAX) scripts to create calculated columns and transform data
- App was directed to improve engineer performance by showing the engineer's ticket volume, MTTA and MTTR
- App was deployed in a desktop and mobile format and provisioned multiple KPIs
- Achieved FBI CJIS Level Two security compliance

Nevtec, Inc. Jun. 2018 – Sept. 2018
Computer Technician Intern San Jose, CA

- Wrote custom batch scripts to automate and speed up PC setups
- Configured new PCs for customers
- Catalogued enterprise data sets
- Documented the company's internal database

PROJECTS

Jakes's Hockey Pool Jun. 2020 – Oct. 2020

Jake's Hockey Pool is a private, hockey-themed fantasy sports website
Website: https://github.com/melliott18/jakes-hockey-pool

- Wrote a live data feed interface and built a map to the undocumented NHL REST API
- Contributed to the data structure and schema designs of the pool and called for architecture review and design specs
- Employed a modular approach to the code design to simplify and speed up development and testing
- Wrote the code in Python and used MySQL to manage the database

Multithreaded RPC Server Oct. 2020 - Dec. 2020

- Implemented a multithreaded remote procedure call (RPC) server to perform arithmetic operations and file services in C
- Client requests and server responses were sent in network byte order using a user-defined protocol
- Server was scalable and supported recursive name resolution for variables, persistent key-value pairs, and fault tolerance

Deduplicating Key-Value Store May 2021 - Jun. 2021

- Designed and built a deduplicating key-value store file system for FreeBSD implemented as a userspace program in C
- File system mapped 160-bit keys to unique 4 KiB blocks stored in a mounted memory disk
- Memory disk was formatted with a superblock to store the file system metadata and inodes to contain the mappings to data blocks

In-Memory File System Apr. 2022

- Built a Unix-style in-memory filesystem with a tree structure hierarchy in C++
- Program was simulated in a terminal shell environment with support for commands such as cat, cd, ls, make, mkdir, pwd, and rm
- Shell commands modified an inode tree consisting of a root node and mappings to files and directories

Multithreaded Password Cracker May 2022 - Jun. 2022

- Created a truly parallel multithreaded password cracker in C++ that spanned across multiple servers on independent computers
- Utilized every CPU core available by assigning each thread a separate section of the password keyspace to crack
- Threads that cracked passwords would communicate to the other servers by multicasting over the network

INTERESTS

AI, ML, Data Science, Data Analytics, Databases, Programming, Operating Systems, Cryptography, Computer Security, CloudOps, DevOps, Networks, Distributed Systems, AWS, Astronomy, Robotics, Biking, Hiking, Hockey