Joshua Kim

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Work Experience

Research Technology Operations | *Microsoft*   *March 2025 - Current*

- Developed and supported internal backend tools and reporting pipelines for GPU quota management, resource allocation, and telemetry analysis across high-demand research clusters.
- Automated Azure lifecycle management workflows using PowerShell, Azure CLI, and Datastore scripts to provision/deprovision resources and enforce security/compliance policies.
- Collaborated with cloud engineers and AI infrastructure teams to optimize GPU utilization metrics using Kusto queries, improving reporting accuracy for leadership capacity planning.
- Contributed to secure identity lifecycle automation and Just-In-Time (JIT) access policies using Azure Active Directory, reducing manual overhead and enhancing RBAC posture.
- Participated in strategic cloud projects including GPU Metrics Agent improvements, CRD testing coordination, sandbox enrollment, and patching automation for internal compute clusters.
- Authored internal documentation, wiki updates, and SOPs for group transitions to new Entra ID and M365 management models, supporting operational continuity.

Python/AI/ML Instructor | *ID Tech Camps*   *June 2023 – Aug 2024*

- Instructed and mentored students in classes of 8-14, guiding them through hands-on coding projects to build technical proficiency.
- Introduced fundamental AI/ML concepts, teaching neural networks and training image recognition models.
- Developed students' problem-solving skills by designing interactive exercises focused on algorithmic thinking and real-world AI applications.
- Fostered confidence in CS by adapting teaching methods to different learning styles and encouraged collaborative, project-based learning.

Projects

Tarpaulin Course Management API (Cloud-Based Microservice)

- Designed and implemented a scalable RESTful backend API simulating a course platform (Canvas alternative), deployed to Google Cloud Platform using App Engine and Cloud Datastore.
- Built modular microservices for user authentication, course management, and role-based access control using Auth0 and JWT, aligning with industry OAuth2 standards.
- Applied cloud-native development principles with GCP services for persistence (Datastore), media storage (Cloud Storage), and secure deployment (App Engine standard environment).
- Enforced authorization checks based on user roles (admin, instructor, student) to restrict access and protect endpoints.
- Developed and maintained unit-tested endpoints; tested API correctness and role isolation via automated Postman tests.
- Practiced CI principles and version-controlled the full project using Git; structured environment configs via .env.
- Gained hands-on experience with real-world backend practices, such as secure API token handling, database normalization, and clean architectural separation of auth logic, data access, and route handling.

Top-n Music Genre Classification Neural Network

- Designed and built a Convolutional Neural Network to classify music genres from audio features using Keras/TensorFlow.
- Built a Mel-Frequency Cepstral Coefficient pre-processing script to convert audio into training, testing, and validation data with Librosa, NumPy, and Scikit-learn.
- Developed a pipeline to import audio clips from datasets to be pre-processed with error handling.
- Built data visualization analysis for observing accuracy/loss over multiple epochs with Matplotlib.

Supply Chain Database Application

- Designed a Full Stack administrative application for supply chain Global Bread Co. with CRUD functionality for managing customer orders and product inventory.
- Built a secure web interface with Flask/HTML/CSS/JS, implementing role-based authentication for administrative access.
- Architected and normalized a relational database schema using MariaDB/MySQL, optimizing entity and customer relationships for data integrity and scalability.
- Developed RESTful API endpoints to facilitate seamless data retrieval and updates between front/back end.
- Deployed the application on a cloud-based environment, ensuring high availability and scalability.

Education

Oregon State University | *Corvallis, OR*   Bachelor of Science in Computer Science
GPA: 3.86 / 4.00

Bellevue College | Bellevue, WA   Associates of Science in Chemical Engineering
GPA: 3.89 / 4.00

Relevant Languages/Skills

Python (4+ years), C (2+ years), JavaScript (1+ years) | Software Development (4+ years), Automated Testing (4+ year), Data Processing/Pipelining (2+ years), Machine Learning (+2 years) | Flask, Node.JS, RESTful API, HTML/CSS, MySQL, MongoDB, TensorFlow/Keras | Linux | BASH | GIT | Agile | Auth0, REST, JWT, GCP