Joshua Kim

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EDUCATION

Oregon State University, Corvallis, OR

Bachelor of Science, Computer Science; GPA: 3.76 Graduated June 2025

Relevant Coursework: Operating Systems I, Data Structures/Analysis of Algorithms, Web Development, Computer Networks, Databases I, Parallel Programming, Usability Engineering, Computer Architecture & Assembly Language, Fundamentals of Software Engineering I & II, Programming Language Fundamentals, Network Security, Cryptography, Open-Source Software, Cloud Software Development

Bellevue College, Bellevue, WA

Associates of Science, Chemical Engineering; GPA: 3.82 Graduated June 2021

Relevant Coursework: Differential Calculus I-III, Applied Differential Equations, Linear Algebra, Discrete Mathematics, Chemistry I-III, General Physics with Calculus I-III, Technical Writing, Organic Chemistry I-II

TECHNICAL SKILLS

Programming Languages: Python (4+ years), C (2+ years), JavaScript

Software Development:3+ years of experience Full-Stack Development, 1+ year w/ Azure, Cloud Computing w/ GCP, UNIX

Machine Learning & AI: TensorFlow/Keras, OpenCV, NumPy, Deep Learning, Image Classification

Web Development: Flask, Node.js, RESTful API, REACT, HTML, CSS

Databases: MySQL, MariaDB, MongoDB, SQL database design & normalization

Automation & Data Processing: Web Scraping (BeautifulSoup, Requests), Automated Testing (1+ year), Data Preprocessing, FFmpeg Audio, Librosa

Version Control: Git, GitHub

RELEVANT WORK EXPERIENCE

Research Technology Engineer
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
University of Washington | June 2023 – Aug 2024

Managed course materials and guided students through personal coding projects.

Helped students gain confidence in computer science concepts and technical coding skills.

Taught neural networks, explored machine learning with Python, and trained image recognition models.

Research Assistant
Bellevue College | June 2019 – May 2021

Conducted research on converting/synthesizing locally sourced microalgae into biofuel.

Utilized field sampling equipment and analytical laboratory techniques to design and execute experiments, focusing on methods to mitigate chlorophyll-related degradation

Analyzed and interpreted data using statistical techniques and error analysis.

Presented weekly findings and research challenges to professors and colleagues.

PROJECTS

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.

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.

Global Bread Co.

Designed a Full Stack administrative web application with CRUD functionality for managing customer orders and inventory.

Implemented a Flask-based web interface with administrative login and authentication.

Designed and normalized an SQL database using MariaDB/MySQL to optimize data relationships and query efficiency.

AutoShopper

Developed a Python-based web scraping application to extract, filter, and export Craigslist car listings.

Integrated a ZeroMQ-based microservice for intelligent car filter suggestions.

Implemented Excel (.xlsx) data export functionality, enabling offline analysis of search results.

Self-trained Image Recognition Bot

Built a deep learning model using Keras to classify hand gestures for ‘Rock, Paper, Scissors’ with confidence scoring.

Integrated a real-time webcam interface in Google Colab for live image capture and prediction.

Optimized model performance using image preprocessing, normalization, and automated decision-making logic for gameplay interaction.

LEADERSHIP & COMMUNITY INVOLVEMENT

Computer Science Mentor, Oregon State University – Assisted students in understanding data structures, algorithms, and software development best practices.

Open-Source Contributor – Participated in collaborative projects on GitHub, enhancing web applications and improving machine learning models.

Hackathon Participant – Competed in multiple hackathons, developing AI-based applications and full-stack web projects.

Calculus I Tutor, Bellevue College – Tutored and assisted fellow college students for Calculus I by Professor Recommendation.

JV Lacrosse Coach – Coached Lacrosse at NHS for the Junior Varsity Team.

LANGUAGES

English - Fluent

Korean - Conversational