Joel Kim

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Education

Northwestern University
B.S. Computer Science, M.S. Computer Science, Minor in Data Science | GPA: 3.7/4.0 June 2026

Relevant Coursework: Data Structures and Algorithms, Data Analysis, Linear Algebra, Artificial Intelligence, Probability and Statistics, Data Visualization, Machine Learning, Agile Software Development, Operating Systems, Data Science Pipeline

Skills

Languages: Python, SQL, C/C++, HTML, CSS, JavaScript, C#, Matlab, R, Java

Tools & Technologies: Azure Databricks, Azure DevOps, Firebase, Google BigQuery, CI/CD, Atlassian, Power BI, MongoDB, Apache Spark, Unity, Flask, LaTeX, Git/Github, NumPy, Pandas, JS (React, Node), Docker, GCP, OpenCV, PyTorch, TensorFlow, Keras, REST APIs, Jira, AWS, MySQL, Figma, Tableau, FastAPI, IDE (VS Code)

Concepts: Big Data, Deep Learning, Reinforcement Learning, Computer Vision, ETL (Extract, Transform, Load), Business Intelligence, Optimization Algorithms, SaaS, Cloud Infrastructure, Developer Tooling, Feature Engineering, Agile Development

Experience

Chamberlain Group
Software Engineering Intern June 2025 – Sep. 2025

- Automated **CMR approval process** by integrating Jira approval statistics with Azure DevOps quality metrics in Azure Databricks, orchestrated via **AWS Lambda APIs**, enabling safe auto-approvals and accelerating DevOps workflows.
- Developed a **Slack-integrated IAM report system** by querying Google Cloud Platform APIs to extract users, roles, and group permissions to send formatted reports to relevant teams to assist compliance report by reducing time by 60%
- Built a data ingestion pipeline using **GraphQL and Cloudflare APIs** to fetch zone-level HTTP traffic logs, process them with Python, and generate monthly reports for security and performance monitoring reducing time by 95%.

Chamberlain Group
Software Engineering Intern June 2024 – Aug. 2024

- Engineered an automated **ETL data pipeline** script to transfer Firebase user data and detect schema discrepancies using the Google BigQuery API and Python to ensure data integrity, saving an estimated **30 hours annually**.
- Designed interactive **Power BI dashboards** to streamline lookups of devices, locations, and schedules for DevOps team, **reducing time by 80%** through an automated pipeline aggregating data from millions of points.
- Leveraged **Azure Databricks and Apache Spark** to process, clean, and aggregate **500+ TB of data** utilizing PySpark and SQL to optimize query performance, ultimately uncovering key bugs that improve schedule data accuracy by 20%.

Northwestern University
Data Visualization Analyst Sep. 2023 – June 2024

- Preprocessed, cleaned, analyzed, and visualized large-scale coral and ocean datasets in Jupyter Notebook using **Pandas, Seaborn, and Matplotlib** to identify relationships between ocean temperatures and coral bleaching over 15 years.
- Built predictive regression models to forecast future heating trends, utilizing **linear regression and XGBoost** with optimization of model performance through **feature engineering, hyperparameter tuning**, and cross-validation.

Northwestern University
Software Research Intern June 2023 – Sep. 2023

- Developed a Matlab script for manual segmentation of ISOCT coral images using the **Image Processing Toolbox**, enabling precise dataset annotation for deep learning of **over 10,000 images** to optimize dataset quality for supervised learning.
- Design and train a **convolutional neural network** to perform automated segmentation of ISOCT coral images using OpenCV, hyperparameter tuning, data augmentation, and loss function analysis to **reduce manual annotation time by 95%** .

Projects

Betting Breaker Sept. 2024 - May 2025

- Developed a FastAPI application to compare sportsbook odds identifying through real-time line discrepancies generating **$30,000**.
- Trained a PyTorch model to identify profitable correlations utilizing feature engineering and backtesting generating **$20,000**.

Spotify Playlist Quiz Sep. 2024 - Nov. 2024

- Built frontend components using React, TypeScript, and Redux; integrated with Spotify's open-source API via REST.
- Implemented the backend with Flask and **MongoDB Atlas** and the frontend using **Fuse.js** to enable real-time searching.

CampusXChange March 2024 - May 2024

- Designed a **full stack marketplace** web application with a **React** frontend and a **Firebase backend** for students.
- Leveraged Firestore, **Realtime Database**, Cloud Functions, Firebase Analytics, Firebase hosting, and Firebase Authentication.