

Jonathan Farrell Kusuma

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EDUCATION

University of Southern California

Los Angeles, CA

Master of Science in Applied Data Science, GPA: 3.7

January 2023 – December 2024

- Machine Learning, Database Systems, Optimization Techniques, Data Management, Data Mining, Search Engines.

University of Illinois at Urbana-Champaign

Champaign, IL

Bachelor of Science in Information Sciences (Dean's List), GPA: 3.9

August 2020 – May 2022

- Data Management and Curation, Machine Learning, Data Visualization, HCI, Data Analytics.

TECHNICAL SKILLS

Programming: Python, SQL (PostgreSQL, MySQL), Java, JavaScript, R

Data Engineering: Airflow, Spark, PySpark, Hadoop, Snowflake, ETL/ELT, MongoDB, Presto

Cloud & DevOps: AWS (EC2, S3, Lambda), Docker, Kubernetes, GCP, Azure (Data Factory), Jenkins, Git

Machine Learning & NLP: TensorFlow, Keras, PyTorch, scikit-learn, NLTK, spaCy, FAISS, LangChain, ARIMA

Web & Visualization: React, Next.js, Node.js, Flask, Streamlit, Power BI, Matplotlib, Seaborn, Selenium, Jupyter

EXPERIENCE

Research Assistant

March 2025 – Present

USC Viterbi School of Engineering, Computer Science Department

Los Angeles, CA

- Enhanced edge-AI vision pipeline; GPU-workstation inference cut residual failures an additional 15%.
- Fine-tuned MobileNetV2 using data augmentation; reached 0.82 macro-F1 improving precision recall across four defect classes.
- Deployed React OctoPrint dashboard pausing jobs at 0.7 confidence; email alerts reduced wasted filament 30%.

Data Analytics and Strategy Lead

July 2024 – March 2025

Teratai Group

Remote

- Structured a PostgreSQL database to manage 30+ properties, optimizing data storage and raising operational efficiency.
- Collaborated with executives to create data-driven pricing models, scaling revenue per property by 18%.
- Spearheaded data analytics initiatives that earned industry recognition, including the prestigious Indonesia Property Awards.
- Designed customer segmentation models with KMeans and PCA, revealing five distinct customer segments, driving 25% higher marketing ROI.

Software Developer

November 2023 – February 2024

Ayola.co

Remote

- Set up MySQL server for the website's backend, ensuring reliable data storage for over 1,000 daily users.
- Created a real-time business scheduling dashboard through React and Moment.js, enabling seamless schedule edits.
- Constructed RESTful API ecosystem using Node.js/Express with 200ms response times for critical endpoints.

Web and Data Researcher

May 2021 – November 2021

HathiTrust Research Center

Champaign, IL

- Fine-tuned NLP pipelines with NLTK, spaCy and BERT to analyze linguistic patterns across 50,000+ historical documents.
- Deployed predictive models to analyze user search behavior, reducing retrieval time by 20% and improving query relevance.
- Designed interactive Matplotlib visualizations enabling cross-disciplinary insights for 210+ research libraries.

Software Developer Intern

May 2020 – August 2020

Gratia Husada Farma

Remote

- Revamped and optimized the company's official website, cutting load times by 40% built on React and Next.js.
- Automated pharmaceutical data extraction with Selenium and BeautifulSoup, saving 20+ weekly staff hours.
- Refactored SQL queries, achieving a 12% reduction in p95 response times for mission-critical inventory management dashboards.

Software Developer Intern

July 2019 – August 2019

Biznet Networks

Jakarta, Indonesia

- Implemented Python/SQL ETL pipelines processing 1TB network data daily with 99.8% data validation accuracy.
- Established an internal tool for a database management system with PostgreSQL, handling over 1300 employees.
- Streamlined RESTful API testing through Postman with pre-scripted checks, improving data validation speed by 30%.

LEADERSHIP AND PROJECTS

USC 3D4E | Lab Manager

Los Angeles, CA | August 2022 – December 2024

- Engineered v1 ML computer vision system with TensorFlow to detect 3D print failures, reducing failed prints by 30%.
- Trained a team of 15 lab techs in Arduino to develop 3D printing solutions, enhancing skill diversity within the lab.
- Mentored 10+ junior team members in ML model deployment, increasing overall lab project completion rate by 25%.

Graduates Rising in Data Science (GRIDS) | Vice President

Los Angeles, CA | January 2023 – May 2024

- Led machine learning workshops, growing participation by 35% and educating 100+ members on ML techniques.
- Organized and spearheaded hackathon events with 15+ teams, securing sponsorships from KNIME while fostering creativity and collaboration among participants.
- Crafted a website configured with NextJS and Docusaurus, boosting engagement and accessibility for 1500+ members.

eTA (Electronic Teaching Assistant) | Lead Developer

Los Angeles, CA | January 2024 – May 2024

- Developed AI-powered learning assistant integrating GPT models, LangChain, OCR and APIs for interactive Q&A.
- Built PDF/image upload support using Python, Streamlit, PyPDF2 and FAISS for vector storage.
- Received grade A and professor's recommendation for curriculum integration. Full documentation on personal website.