KELVIN CHRISTIAN

Software Engineer & Machine Learning Engineer

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EXPERIENCE

Backend & ML Engineer Feb 2024 – Present
Chekable *Oakland, CA*

- Collaborated with frontend engineer and UX/UI designer to deliver multiple new features in a fast-paced agile environment
- Achieved 40% reduction in end-to-end system response time by optimizing gRPC, REST APIs, and MongoDB queries
- Engineered robust Azure ecosystem, leveraging Container Apps and pub/sub service, yielding $150K in annual cost reduction
- Built a real-time collaboration system with AI copilot to handle 100+ concurrent users by utilizing WebSockets and pub/sub
- Crafted a RAG pipeline using LLM with agentic design patterns to generate patent applications from user drafts and figures

NLP Research Intern Jun 2023 – Aug 2023
Institute for Experiential AI *San Jose, CA*

- Collaborated with the research team to develop an advanced Q&A model for irregular tables using ArXiv document corpus
- Managed 50 parallel data processing jobs on HPC via Slurm and bash, efficiently handling 6TB of LaTeX and PDF documents
- Extracted and processed 1.7M+ table images and text from PDFs using Table Transformer and OCR models via Hugging Face
- Engineered a PyTorch-based model training pipeline to learn table representation mapping from table images to LaTeX code

Data Scientist Intern Jul 2022 – Sep 2022
Cisco Systems *Seattle, WA*

- Cleaned and analyzed 1.2TB of real-time DNS queries from AWS S3 using PySpark to enhance the DNS network security
- Reduced ETL time on Databricks by 70% through the optimization of PySpark SQL query and data migration to Delta Lake
- Improved user experience by reducing incorrect website blocks by 6% through NLP feature engineering on domain names
- Developed anomaly detection using EM clustering to identify outliers among 100,000+ users based on request patterns

AI Engineer Intern Jan 2022 – Jun 2022
Aeyesafe *Seattle, WA*

- Engineered real-time ETL pipeline on AWS using microservices, RabbitMQ, and gRPC for efficient sensor data processing
- Developed and deployed 15+ Flask RESTful APIs with complex SQL queries to manage user profiles and health metrics
- Led R&D team of 4 interns, driving innovation in ML models for fall detection with 96% accuracy on thermal camera data
- Utilized Spark and Airflow to automate generation of weekly BI reports from large-scale sensor and user datasets

PROJECTS

iSEArch Hotels | *Python, Docker, Streamlit, Qdrant, LangChain, OpenAI* Mar 2024

- Built and deployed a RAG hotel recommendation system chatbot by utilizing the Qdrant vector database and GPT-4 model
- Won 2nd place in the Traversaal.ai Hackathon

Diffusion-enhanced Mask Aware Transformer (DeMAT) | *PyTorch, Hugging Face, Tensorboard* Dec 2023

- Developed DeMAT, a deep generative inpainting model that integrates Mask Aware Transformer, Segment Anything, and VAE
- Achieved 11.3% and 39.3% improvements in PSNR and SSIM over Stable Diffusion baseline through extensive experiments

Movie-style Art Generation | *Python, PyTorch, OpenCV, Hugging Face* Dec 2023

- Implemented a pipeline to enhance dataset quality by applying super-resolution on movie frames using Real-ESRGAN model
- Fine-tuned Stable Diffusion model using LoRA and Dreambooth methods, generating high-quality movie-style artwork

EDUCATION

Northeastern University San Jose, CA
M.S. Computer Science, GPA: 3.88/4.00 *2021 – 2023*

University of California, Los Angeles Los Angeles, CA
B.S. Financial Actuarial Mathematics (Minor in Statistics), GPA: 3.58/4.00 *2017 – 2019*

SKILLS

Programming Languages: Python, R, SQL, C++, Java, Javascript
Databases: MySQL, MongoDB, Redis, PostgreSQL, Qdrant, Milvus, Weaviate, Elasticsearch, InfluxDB
Machine Learning: PyTorch, Tensorboard, Spark, OpenCV, NLTK, Scikit-learn, Statsmodels, Pandas, NumPy, Matplotlib, Pyomo
Tools: AWS, GCP, Azure, Databricks, Socket.io, Redis, RabbitMQ, Docker, Airflow, OpenAI, LangChain, CrewAI