Kyle Knudson

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WORK EXPERIENCE

LIFE TIME FITNESS

Associate Director Data Engineering - *Data Ingestion & Curation, 8 direct reports*　　　　　　2025 - Present
- o Lead 8 engineers to transform enterprise data architecture, improve azure function apps, standardizing Snowflake ingestions and **boosting delivery efficiency 125%**, enabling AI-ready analytics.
- o Directed company-wide data governance, streamlining steward interactions and strengthening data management practices.
- o Optimized platform costs, achieving **$20K/month savings** through rationalization and best practices.
- o Rolled out AI & advanced analytics initiatives, including **DOMO AI, Snowflake Cortex, and Agentic AI POCs** (MCP, OpenAI SDK, CrewAI), automating metadata and enabling actionable insights.

UnitedHealth Group/Optum

Senior Software Engineering Manager - *Decom App Development & Data Ops, 6 direct reports*　　　2024 - 2025
- o Automated data pipelines, improving team productivity by 40% and contributing to **$500M company savings**.
- o Designed and delivered cross-archive search application and privacy compliance processes, ensuring adherence to individual rights requests.
- o Migrated main search application to Azure public cloud, creating a **blueprint for enterprise cloud enablement**.
- o Implemented new validation process handling **1 TB/hr, a 1000% improvement** over previous methods.

Software Engineering Manager - *Archive Customer Data Enablement, 12 direct reports*　　　　　　2022 - 2024
- o Led 12 engineers to design customer engagement models, **improving POC delivery 3.5x** and production tool **throughput 10x.**
- o Automated decommissioning pipelines, achieving **11.2x ROR**, and established end-to-end customer engagement workflows.
- o Partnered enterprise-wide to enable compliance and cross-archive data searches; served as acting product owner, defining strategy, roadmap, and stakeholder alignment.

Software Engineer/Data Scientist - *Product Support Data & Analytics, 4 direct reports*　　　　　2021 - 2022
- o Led team (4 engineers) to consolidate 20+ tools into centralized platforms, saving **400+ hours/year** and improving automation **ROR to 8.7x**.
- o Automated key processes in statistical monitoring dashboards, reducing administrative workloads >240 hours/year.
- o Initiated first people management role, scaling from 1 to 4 direct reports while establishing development processes and hiring 3 engineers.

Associate Software Engineer/Data Scientist - *Product Support Data & Analytics*　　　　　　　　2020 - 2021
- o Built deep learning models identifying anomalies in issue tracking, generating **$200K+ savings** and **increasing productivity 200%**.
- o Developed predictive cancer risk scoring models (85% accuracy) used in R&D initiatives.
- o Automated multi-source reporting pipelines to improve product insights.

Software Engineering Intern - *Claims Processing Application Team*　　　　　　　　　　　　　2019 - 2020
- o Utilized Agile Methodology to develop components of an enterprise level application that increased efficiency of current health care processes
- o Combined Unit Testing, External Service Tests and UI tests for end-to-end testing on the application

EDUCATION

M.S. Computer Science - *AI Specialization,* *Saint Cloud State University, Saint Cloud, MN*　　　2018 - 2020
B.S. Cell Biology & Neuroscience - *Biomedical Specialization,* *Montana State University, Bozeman, MT*　2011 - 2015

Trainings/Certifications/Engagements
- Optum AI Nano-degree Mentor
- Optum Ethics in AI, Carnegie Mellon University
- UnitedHealth Group Emerging Leadership Program
- Coursera Google Project Management Certificate
- Udacity Data Engineering, AI For Healthcare, NLP and Deep Learning Nano-degrees

Skills
- **Programming & Frameworks:** Python (Django, Flask, FastAPI), JavaScript/TypeScript, React, Node.js, Rust, C/C++, Java, R, Bash, PHP, HTML, CSS, Restful APIs, & Web Based Solution Architecture
- **Databases:** MongoDB, Apache Cassandra, Relational DBs (MySQL, SQL Server, PostgreSQL), Snowflake, Teradata
- **Cloud Platforms:** AWS (S3, Lambda), Azure (Function apps, AKS), GCP; Cloud Migration
- **AI/ML & GenAI:** TensorFlow, PyTorch, MCP, OpenAI Agent SDK, LangChain/LangGraph, Deep Learning, NLP, GANS, Neural Networks
- **Data Engineering & MLOps:** ETL pipelines, Terraform, Docker & Kubernetes, Azure DevOps and Github Actions
- **Agile Development:** Scrum/Kanban, sprint planning, backlog management
- **Tools:** Cursor, Snowflake Cortex, Github Copilot
- **Team leadership & mentoring:** coaching engineers, career growth support, fostering high-performing teams
- **Strategic planning:** roadmap ownership, aligning technical and business goals
- **Execution & delivery:** project lifecycle management, ensuring on-time releases, product, design, & engineering integration
- **Problem-solving & decision-making:** data-driven, navigating ambiguity