Daniel Will George
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Professional Experience

- **Amazon Science (AWS)** *Machine Learning Engineer, 2023 - 2025*
  - Deployed a Two Towers recommendation model that achieved significant improvement over baseline models, leveraging SOTA techniques to generate user and item embeddings for fast similarity matching.
  - Conducted comprehensive analysis of multi-model deployment options for personalized recommendation systems, including detailed parameter weight analysis of neural network models, evaluating memory footprints, inference latency, and scalability across SageMaker hosting paradigms including multi-model endpoints, inference pipelines, TorchServe, and NVIDIA Triton Inference Server
  - Developed a statistical framework using Chernoff bounds to optimize personalized advertising, enabling efficient bid allocation based on user engagement propensity scores while maintaining statistical significance with smaller sample sizes.
  - Engineered a streaming feature pipeline, using Python and React, for AWS TV recommender system which processes impressions data in real-time, supporting both online and offline model evaluation using Kinesis and AWS infrastructure.
- **Daniel George Research** *Founder/Applied Scientist, 2023-2024*
  - Briefly founded a machine learning & applied science consulting company following a mass layoff from Microsoft Research. Secured contracts with Fortune 500 corporations Disney and Nike.
  - Designed and implemented a real-time credential stuffing detection system using custom neural network embeddings and FAISS similarity search, achieving 14x improvement over rule-based approaches with 95% precision and recall
  - Developed optimized feature engineering pipeline for fraud detection, reducing preprocessing complexity from $O(n^2)$ to O(n) while handling millions of login events
  - Built complete ML production architecture for highly available fraud detection, including feature transformation, model serving, and FAISS vector storage with sub-second inference times
  - Led end-to-end ML project from problem definition through validation, handling geographical, temporal, and behavioral signals to detect sophisticated credential stuffing attacks in near real-time
- **Microsoft Research** *Sr. Software Engineer, Machine Learning, 2022 - 2023*
  - Developed technology for Science Engine, an innovative product which enables Microsoft's customers in biopharma, genetics, chemicals, and alternative energy to use applied machine learning
  - Led development to connect application backend infrastructure and platform to serverless Azure SQL pool, a distributed data processing system for machine learning
  - Experimented with model architecture, convolutional NN layers (Python, PyTorch) and evaluated how these architectural changes affected the model's performance on seismic imaging tasks
- **reddit** *Sr. Engineer, Machine Learning, 2021 - 2022*
  - Directed transition of Core Machine Learning team (content recommendations) to new in-house development platform infrastructure allowing scientists to scale machine learning models independently and take advantage of concurrency and optimization across multiple cores. Technologies used: Python, Docker, Kubernetes
  - Led investigation and development to improve response time for microservices by tuning parameters and implementing server connections pool for green threads. Technologies used: Python, Go
- **Disney** *Sr. Software Engineer, 2015 - 2021*
  - Developed recommender systems for two Disney streaming services, including Disney Plus (Disney+). Technologies used: Javascript, React, Node, Python, Java, Docker, Jenkins, Amazon Web Services (AWS)

Teaching Experience

- **Computer Science Department (Illinois Wesleyan University)** *Lecturer, 2023*
  - Courses: CS253 (Software Development), CS127 (Computer Science I), CS125 (Intro to Computer Science)
  - Course website, all materials and design developed by me: `https://www.danielwillgeorge.com/cs253`

Education

- **Stanford University (School of Engineering)** *2020 - 2021*
  - Graduate Certificate, Computer Science (3.8 GPA)
- **University of Washington (Michael G. Foster School of Business)** *2011 - 2012*
  - Graduate Certificate, Business Administration (3.8 GPA)
- **Illinois Wesleyan University** *2005 - 2011*
  - Bachelor of Arts, Music (Alpha Lambda Delta, Phi Eta Sigma Academic Honors)
  - University Distinguished Award for Intellectual Leadership

Coursework Recognitions

- **CS161: Design and Analysis of Algorithms (Stanford University)**
  - Top 1% Contributor recognized in class, endorsed for answers in algorithm analysis and proofwriting
- **CS103: Mathematical Foundations of Computing (Stanford University)**
  - Instructor-endorsed answerer, top 1% contributor

Peer Reviews & Conferences (Professional)

- **AMLC,** Amazon Machine Learning Conference *2023-2024*
- **DDAC,** Disney Data & Analytics Conference *2022-2025*

Skills/Technologies

- **Machine Learning & AI**
  - Deep Learning Frameworks: PyTorch, TensorFlow, Keras
  - ML Operations: MLflow, SageMaker
  - Recommender Systems: Collaborative Filtering, Content-Based, Hybrid Approaches, NVIDIA Merlin
  - Computer Vision: CNN architectures, Image Processing
  - NLP: Transformers, HuggingFace, BERT/GPT models
- **Data Engineering & Processing**
  - Data Processing: pandas, NumPy, Dask, PySpark
  - Feature Stores: feast, SageMaker Feature Store
  - Streaming: Kinesis, Kafka, Pubsub
- **Cloud & Infrastructure**
  - Amazon Web Services (AWS): SageMaker, Lambda, S3, EC2, EKS/ECS
  - Microsoft Azure: ML Studio, Azure SQL, Azure Functions
  - Containerization: Docker, Kubernetes
  - Compute/GPUs: CUDA, NVIDIA Triton

- **Programming Languages**
  - Python, C/C++, Java, Javascript
- **Development Tools**
  - CI/CD: Github, Jenkins
  - Databases: PostgreSQL, DynamoDB, Redis
  - Monitoring: Grafana, CloudWatch

Miscellany

- Dual citizen United States & Canada