Michael James Schock

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Professional Experience

Software Engineer (AI/ML Platform)   **Oct. 2022 - Jan. 2024**
Phaidra   **Seattle, WA (Remote)**

- Spearheaded orchestration and automation of AI agent training (with each agent an ensemble of PyTorch models) into an MLOps pipeline backed by a self-hosted in-cluster duo of Prefect Server and Agent to run training ad-hoc and on-schedule, with follow-up work demonstrating the migration path from the deprecated Prefect Agent to Kubernetes-native Prefect Worker.
- Rapidly prototyped a working MVP showcasing how we could easily scale the training runs via the Prefect-Ray integration and an in-cluster or Anyscale Cluster, also presenting SkyPilot as a way to abstract Ray and cloud computing resources, optimizing for minimal computational cost or time.
- Modernized the developer experience for the AI Platform team by bringing in Tilt to watch for changes in the Kubernetes manifests for full Docker build/pushes, thereafter updating pods without reload for fast iteration, and providing custom functionality to run data preparation, agent training, and inference pipelines via configurable buttons in the Tilt UI.
- **Technologies**: Cloud SQL for PostgreSQL, Docker, Google Cloud Platform (GCP), Google Kubernetes Engine (GKE), gRPC, Prefect, Python, PyTorch, Ray, SkyPilot, Tilt

Teaching Assistant   **Aug. 2022 - Dec. 2022**
Georgia Institute of Technology   **Atlanta, GA (Part-Time; Remote)**

- Served as a Teaching Assistant (TA) for CS 7639: Cyber-Physical Systems Design & Analysis.

Machine Learning Engineer   **Oct. 2021 - Jul. 2022**
Greyscale AI   **San Carlos, CA**

- Created a proof of concept (POC) for a data engineering pipeline to extract, transform, and load images and their corresponding labels from various data sources and formats into the COCO dataset format with k-fold train-validation-test splits using the FiftyOne and Albumentations libraries.
- Constructed a POC for a data modeling pipeline to train and validate a PyTorch Faster R-CNN model with various modifications for computer vision tasks such as object detection and image segmentation from a train-validation split output by the data engineering pipeline.
- Assembled a POC for a model deployment pipeline to deploy a model produced by the data modeling pipeline into a local docker container running TorchServe (or SageMaker) to run inference tests upon that model and to trigger the creation of a function that ran on schedule to monitor the deployed model.
- Designed a dashboard using Amazon QuickSite to automatically generate visualizations, including emails pointing to those visualizations, that displayed the performance of the served model and assigned SageMaker GroundTruth jobs for our internal teams to help with data labeling.
- Built a POC framework using Kedro and DVC to join the data engineering, data modeling, and model deployment pipelines, running pipeline components only when artifacts tracked by DVC changed.
- **Technologies**: Albumentations, Amazon QuickSite, Amazon SageMaker Ground Truth, Docker, DVC, Faster R-CNN, FiftyOne, Kedro, Matplotlib, MobileNet, NumPy, pandas, Python, PyTorch, scikit-learn, TorchServe, torchvision

Machine Learning Engineer   **Sep. 2018 - Oct. 2021**
Ople.AI   **San Mateo, CA**

- Refactored the data ingestion pipeline into more modular components.
- Drove the model explainability implementation.
- Led the development of the forecasting service.
- Built a worker service that operated on graph structures representing machine learning tasks and states.
- Developed various features and addressed bugs in our systems.
- **Technologies**: Amazon Forecast, Amazon Web Services (AWS), Docker, Docker Compose, JavaScript, LightGBM, Matplotlib, NumPy, pandas, Python, SHAP (SHapley Additive exPlanations), Tableau

Software Engineer   **Nov. 2016 - Sep. 2018**
BigCommerce   **San Francisco, CA**

- Engineered features for the BigCommerce storefront platform.
- Wrote unit tests for all new and changed code, increasing code coverage.
- While taking the lead on building out a new feature, discovered an opportunity to improve the codebase by refactoring the code into an easier-to-reason-about structure such that future additions wouldn't require as much overhead.
- **Technologies**: Amazon Web Services (AWS), Docker, gRPC, hapi, JavasScript/TypeScript, Laravel, PHP, React, Ruby, Ruby on Rails

Software Engineer · May 2014 - Oct. 2016
Autodesk (via Globant) · San Francisco, CA

- Implemented features for the Customer Enterprise Portal for Autodesk.
- Caught up to speed quickly, diving into the codebase with minimal support.
- Formed a POC to re-architect a centerpiece of the Portal, refactoring spaghetti code and building a more well-organized system that can easily accommodate new types of Autodesk products and services along with their associated data and functionality.
- Taught and led other developers with patience and a desire to improve their understanding.
- Responded to bugs, defects, and applicable business concerns with a strong sense of urgency.
- **Technologies**: Amazon Relational Database Service (RDS), Apache Tomcat, Backbone.js, Docker, Java, Java Servlets, JavasScript/TypeScript

Software Engineer · Aug. 2012 - May 2014
PlantLog · Pleasanton, CA

- Converted features from the legacy implementation of PlantLog, which ran only on Windows as a native application, to a web and mobile application hosted in the cloud. Re-architected the backend to be RESTful, refactoring a single large switch case into resource-specific endpoint logic.
- Converted legacy reporting components for use in the new system.
- Rebuilt the mobile app, using the BackboneJS framework to organize the application.
- Added barcode scanning/lighting functionality to the mobile app.
- **Technologies**: Amazon Web Services (AWS), Apache Cordova/PhoneGap, Backbone.js, Google Web Toolkit (GWT), iOS, JasperReports, Java, JavasScript

Education

Master Of Science In Computer Science · Jan. 2018 - May 2025
Georgia Institute of Technology · Atlanta, GA (Less-than-Part-Time; Remote)

- Specialization in Computational Perception and Robotics

Bachelor Of Arts In Physics · May 2010
University Of California, Berkeley · Berkeley, CA

Coursework & Certifications

CS 7650: Natural Language Processing (Georgia Tech)	Fall 2024
AI Agents in LangGraph (DeepLearning.AI; 0d74827b-6eea-4192-a91b-0531fa1b4cc3)	Sep. 2024
Function-calling and data extraction with LLMs (DeepLearning.AI; bc94b773-a3a7-4405-928f-e24d138db517)	Sep. 2024
Pretraining LLMs (DeepLearning.AI; acd62d79-7905-4e8c-938e-3a9baa7fa37d)	Sep. 2024
AI Agentic Design Patterns with AutoGen (DeepLearning.AI; aaa82f56-f1b7-4fa5-8294-b2d361bd3f9a)	Jul. 2024
Generative AI Nanodegree (Udacity; 90eec41a-ba24-11ee-b074-e35f0b9acf2c)	May 2024
Multi AI Agent Systems with crewAI (DeepLearning.AI; f047b2d3-69e8-4fbd-82df-27bf72dbf770)	May 2024
CS 6603: AI, Ethics, and Society (Georgia Tech)	Spring 2024
CS 7646: Machine Learning for Trading (Georgia Tech)	Fall 2023
Prefect Associate Certification (Prefect; 72680269)	Apr. 2023
CS 7643: Deep Learning (Georgia Tech)	Fall 2022
Machine Learning Engineer Skill Set Certification (Workera; 4JKAZBKL)	Aug. 2022
CS 7639: Cyber-Physical Systems Design & Analysis (Georgia Tech)	Spring 2021
CS 7642: Reinforcement Learning & Decision Making (Georgia Tech)	Fall 2019
Deep Reinforcement Learning Nanodegree (Udacity; CKU3QGTF)	Jul. 2019
CS 7641: Machine Learning (Georgia Tech)	Spring 2019
Math for Machine Learning Specialization (Coursera; RE4TKCWC7U6X)	Jan. 2019
Deep Learning Part I Certificate (The Data Institute, University of San Francisco)	Dec. 2018
CS 6601: Artificial Intelligence (Georgia Tech)	Fall 2018
Deep Learning Specialization (Coursera/DeepLearning.AI; P234NUS9DS7M)	Sep. 2018
CS 7638: Artificial Intelligence Techniques for Robotics (Georgia Tech)	Spring 2018
Deep Learning Foundation Nanodegree (Udacity; 6LD4H74U)	Jan. 2018
React Nanodegree (Udacity; 7Q4R92JT)	Dec. 2017
Artificial Intelligence Nanodegree and Specializations (Udacity; EH367J99)	Oct. 2017
Machine Learning Specialization (Coursera; S58WYDFTRMTB)	Feb. 2017
CSCI E-160: Java for Distributed Computing (Harvard Extension School)	2012

Skills

Accelerate, Agent Protocol, AutoGen, AutoGPT, bitsandbytes, Computer Vision, ControlFlow, crewAI, DataDreamer, Datasets, Diffusers, Evaluate, Function/Tool Calling, JavaScript/TypeScript, LangChain, LangGraph, llama.cpp, LlamaIndex, Marvin, Multimodal LLM/VLMs, NumPy, OpenAI, PEFT (Parameter-Efficient Fine-Tuning), pandas, PostgreSQL, Prefect, Python, PyTorch, Ray, Reflex, scikit-learn, SkyPilot, SQL, Swarms, Tokenizers, timm, Transformers, TRL, ...