Aydin Tabatabai

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Education

University of California, San Diego — La Jolla, CA
*B.S. in **Cognitive Science**, Specializing in **Machine Learning*** — *Jun. 2025*
*Minors: **Computer Science**, **General Biology*** — *GPA: 3.72*

- Relevant Coursework: Data Structures & Algorithms, Supervised/Unsupervised Learning, Neural Networks & Deep Learning, Reinforcement Learning, Large Language Models, Systems Programming

Experience

Lead Software Engineer & Cofounder — Jul. 2025 – Present
LucidFill — *Remote*

- Built the MVP of a mobile-first AI PDF editor, enabling users to scan, identify, and fill forms seamlessly via OCR and intelligent field detection.
- Integrated multi-modal AI pipelines to auto-extract data from documents, support conversational form filling, and generate structured field mappings.
- Developed scalable backend services enabling secure document handling, real-time interactions, and reliable export and distribution workflows.
- Co-led product and engineering strategy, collaborating with cofounders to deliver user-focused features and reliable infrastructure.

Machine Learning/AI Engineer — Jan. 2025 – Jul. 2025
Soaper — *Remote*

- Designed and implemented an end-to-end AI-powered physician response system, reducing message response time and processing daily patient interactions with pre-generated, context-aware suggestions.
- Developed a LoRA fine-tuning pipeline leveraging physician responses and feedback, continuously improving the model's accuracy and contextual relevance in response generation.
- Ensured HIPAA-compliant handling of patient data by implementing secure data pipelines, role-based access controls, and thorough test coverage to maintain reliability and privacy.
- Built an end-to-end clinical search tool for physicians to easily query across patient notes, labs, and imaging, improving the speed and accuracy of chart review.

Projects

Volleyball RL | *Python, PyTorch, Gymnasium*

- Designed, trained, and evaluated reinforcement learning volleyball agents using PPO, A2C, DQN, and CEM in a custom Gym environment to evaluate the effects of algorithmic choices on performance.
- Evaluated agents over 1000+ episodes using metrics like average reward and win rate, with PPO achieving an 80% win rate against a strong baseline.
- Analyzed how the algorithms learn and adapt to different rewards, exploration strategies, and opponent behaviors in dynamic multi-agent environments.

Deep Learning Model Evaluation | *Python, PyTorch, Matplotlib*

- Developed and benchmarked 7 convolutional neural network models, including custom CNNs, ResNet18 variants, and VGG11, to explore the effects of architectural and training choices.
- Investigated the impact of model depth, activation functions (ReLU, LeakyReLU), optimizers (Adam, SGD), batch normalization, and dropout.
- Evaluated model performance using training loss, test accuracy, and training time, while visualizing learning behavior and trends with Matplotlib.

Technical Skills

Languages: Python, Java, C/C++, SQL (Postgres), JavaScript/TypeScript, Swift, Bash
Libraries/Frameworks: PyTorch, TensorFlow, Scikit-learn, FastAPI, React, Tailwind CSS, SwiftUI
Tools/Technologies: Git, GitHub, Google Cloud, Azure, REST API