Nick Bukovec

206-331-1782 | bukovec@stanford.edu | linkedin.com/in/bukovec | github.com/buk0vec

EDUCATION

Stanford University   Stanford, CA
Masters of Science, Electrical Engineering to be conferred March 2026 (current GPA: 3.67)   *Sep. 2024 – Present*

California Polytechic State University, San Luis Obispo   San Luis Obispo, CA
Bachelor of Science, Computer Science (GPA: 3.76)   *Sep. 2020 – June 2024*

Korea University   Seoul, South Korea
Semester Abroad (GPA: 3.91)   *Feb. 2023 – June 2023*

EXPERIENCE

Service Desk Student Lead   Aug. 2021 – Sep. 2024
California Polytechnic State University Information Technology Services   *San Luis Obispo, CA*
- Supervised team of forty students that provide technical support for the student, staff and emeritus population of the university.
- Facilitated operation of call center handling over one hundred calls per day
- Resolved hundreds of IT issues (network, security, etc.) through email, phone, and in-person

Software Engineering and Data Science Intern   June 2022 – Aug. 2022
NASA Jet Propulsion Laboratory   *La Cañada Flintridge, CA*
- Spearheaded creation of extensible web configuration tool with React and Next.js for deploying ground data system infrastructure and applications into AWS VPC
- Validated geospatial datasets and tested submission and evaluation mechanisms for open data challenges

PROJECTS

QT3 | *Python, Numpy, TensorFlow, Keras*   Dec. 2022
- Trained models with reinforcement learning to play Tic Tac Toe and Connect Four by playing against self
- Successfully approximated Q-functions using neural networks built with Keras to learn optimal game strategies

InfoGAN | *Python, Numpy, Pytorch*   May 2023
- Recreated model described in "InfoGAN: Interpretable Representation Learning by Information Maximizing Generative Adversarial Nets" using PyTorch to generate images of digits
- Model generated images of handwritten digits while capturing the specific digit, rotation, and thickness with latent codes

WikiIndex | *Python, FastAPI, Docker, JavaScript, Next.js, Amazon Bedrock*   Jan. 2024 – June 2024
- Constructed retrieval-augmented generation (RAG) pipelines to answer multi-hop questions using Mistral 7b-instruct on Amazon Bedrock and self-hosted embedded Wikipedia abstracts generated with ColBERTv2
- Developed and containerized embeddings search and RAG APIs, created Next.js chat frontend to interact with and consume server-sent events from RAG API
- Optimized RAG pipeline ROUGE scores were $35.7\times$ higher than basic QA prompting on trivia questions

FakeSound Mamba | *Python, Pytorch, Lightning, Amazon Sagemaker, Docker*   Sep. 2024 – Dec. 2024
- Extended Vision Mamba architecture in Pytorch and Lightning to classify and segment general audio clips with inpainted deepfake segments using multi-task learning
- Constructed custom Sagemaker containers to train models using DDP on EC2 Spot instances
- When tested using deepfake attacks unseen in the training data, model showed higher clip-level classification accuracy and higher segment-level F1 score than CNN baseline and subjective human evaluation

TECHNICAL SKILLS

Completed Coursework: Machine Learning, Advanced Machine Learning, Deep Learning, Knowledge Discovery from Data, Software Engineering II, Statistical Computing with R, Introduction to Databases
Languages: Python, C, SQL (Postgres, MySQL), Java, HTML/CSS, JavaScript, TypeScript, Node.js
Frameworks: Pytorch, Lightning, TensorFlow, Keras, Scikit-learn, FastAPI, React, Next.js, Astro, Svelte
Libraries: NumPy, Matplotlib, Pandas, TensorBoard, librosa, SciPy, dspy
Development/Deployment Tools: Git, Docker, Bash, Github Actions, Amazon Sagemaker, Terraform, Modal
Certifications: Deep Learning Specialization (Coursera)