Ludovico Federici

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Collaborative **Machine Learning Engineer and Data Scientist** with expertise in leading cross-functional projects and applying AI techniques to deliver actionable insights. Driven by innovative solutions and constructive feedback, I am passionate about leveraging technology and entrepreneurial problem-solving for impactful outcomes.

Education

University of California, Berkeley | Berkeley, CA **Grad. Dec 2024**

B.A. Computer Science, B.A. Cognitive Science, Minor in Data Science *3.98 GPA*

- **Awards and Recognitions**: Nova 111 Italy Student List, Sutardja Center Certificate in Entrepreneurship & Technology, Cal Alumni Association Leadership Scholarship (2023/2024), Dean's List, Honors To Date
- **Relevant Coursework**: Artificial Intelligence, Efficient Algorithms, Database Systems, AI for Healthcare
- **Organizations**: Neurotech@Berkeley, NextGen Consulting at UC Berkeley, Nova Talent, LeadTheFuture

Technical Skills

AI & ML: scikit-learn, Deep Learning (TensorFlow and PyTorch), LLMs, CNNs, Hyperparameter Tuning.
Data Science & Engineering: Python (Pandas, NumPy, Seaborn, Matplotlib), SQL, Tableau, BigQuery, dbt, FiveTran.
Programming Languages: Python, C, Java, JavaScript, Dart (Flutter), x86 Assembly, RISC-V, HTML, CSS, SCSS.

Work Experience

Spotify | New York, NY **Jun 2024 – Aug 2024**

Data Science Intern, Podcast Mission Insights

- Led a cross-functional project in collaboration with product, engineering, and marketing teams to identify key success drivers for video content on Spotify, unpacking the need for video integration and segmenting creators by video type.
- Analyzed **358 video shows** through high-volume datasets using a comprehensive data stack, from ETL processes with **BigQuery** and **dbt** to data analysis and visualization with **Python** (**pandas**, **seaborn**) and **Tableau**.
- Engineered a continuous **weighted metric** to predict video content success from key performance indicators, delivering data-driven insights for creator education, content suggestions, and promotional activities to **50+ stakeholders.**

AWEAR | Berkeley, CA **Jan 2024 – May 2024**

Machine Learning Engineer Intern

- Developed and fine-tuned ML models to personalize AWEAR's service by developing new **EEG-based metrics**, increasing emotion detection accuracy by **20%** and enhancing user experience with tailored recommendations.
- Led a **team of 4** to develop an MVP **real-time GUI** in **Flutter** for visualizing EEG insights and providing actionable recommendations based on emotional metrics, enhancing cross-platform compatibility and user engagement.

NVIDIA | Berkeley, CA **Jan 2023 – May 2023**

Consulting Engagement Lead

- Led a **team of 5** to identify growth opportunities for **NeMo LLM** in clinical trials by analyzing market trends and developing **B2B go-to-market strategies**, resulting in a projected **$1.7 billion serviceable market** for NVIDIA.
- Interviewed **30+ experts** to identify clinical trial challenges and proposed NeMo LLM solutions to improve patient matching, reduce enrollment times by **30%**, and increase side effect prediction accuracy, aligning with **FDA** guidelines.

Technical Projects

CNN for Breast Cancer Diagnosis | *Python, TensorFlow, ResNet-50, scikit-learn, NumPy*

- Developed a CNN to predict breast cancer severity from **175,000+** biopsy images in the Nightingale dataset, achieving **90.8% accuracy**; optimized preprocessing, applied class weighting, and adjusted thresholds to enhance clinical use.

Assembly Language Classifier | *RISC-V, C*

- Built an assembly language classifier in RISC-V and C for handwritten digit recognition using a neural network with **ReLU activation**; optimized memory and matrix operations for efficient performance on low-level hardware.

Database Management System Implementation | *Java, SQL, NoSQL*

- Optimized DBMS with B+ trees, join algorithms, query optimization, multigranularity locking, and database recovery.

Video Focus with EEG | *MUSE S, Python, OpenAI API, React Native*

- Created a hackathon-winning program that tracks viewer focus from EEG to enhance online lecture understanding.