BEN BROWN

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OBJECTIVE

Passionately motivated electrical engineer seeking full-time, fast-paced, cross-disciplinary work combining Electrical Engineering, Artificial Intelligence, and Ethics in a research setting
Available post-graduation in May 2024

EDUCATION

Bachelor of Electrical Engineering, Rochester Institute of Technology — Expected 2024
GPA: 3.08

SKILLS

Software	Python, PyTorch, TensorFlow/Keras, Jupyter, C/C++, MATLAB, Assembly (MSP430), LaTeX
Hardware	Circuit Analysis (AC/DC), SMT/THT Soldering, PCB Design (Altium), Verilog/VHDL

EXPERIENCE

Research Assistant — Aug 2023 - Present
DeFake Project — *Rochester, NY*

- Wrote scalable, modular **PyTorch** framework for variable-scale testing of **DeepFake detection** algorithms to investigate the security of visual media
- Collected data on several adversarial attacks for DeepFake detectors and generators to determine vulnerabilities in common deepfake detection architectures

Electrical Intern D — Jan 2023 - Aug 2023
L3Harris Technologies — *Rochester, NY*

- Produced largest hardware prototyping run seen by sector in record time in a non-production facility
- Wrote complete **Python** test suite to automate hardware checks after testing, increasisng efficiency by 57%
- Wrote procedures, **Python/C/C++**, and reports for small scale testing
- used oscilliscopes, multimeters, and soldering to debug and repair failing units
- Immersed myself in management literature (**Sprint, Six Hats**) to improve my leadership and communication

Electrical Intern (ML/AI) — Jan 2022 - Aug 2022
TIMET Morgantown — *Morgantown, PA*

- Collaborated with several groups in producing technology that simultaneously simplifies operator's jobs, and potentially saves the company seven figures annually
- Employed several Time Series prediction technologies, including fundamentals **(RNN, LSTM, GRU)** and state of the art **(SCINet, FEDformer)** to estimate chemical profile of furnace contents and ensure melt quality
- Advocated for ethical implementation of technological tools to prevent reckless worker displacement
- Designed custom genetic algorithm to optimize **XGBoost** hyperparameters in production use

PROJECTS

Dream Presenter - RIT NXT: Used multiple EEG datasets to produce a GAN-style architecture in **PyTorch** that can generate images from dreams based on Sleeping State neural activity.

SonicRL - EEEE-489 Final Project: Created CNN-based RL agent in **TensorFlow** that worked within a Sonic 1 emulator using pixels as input. Tasked with completing the first level using reward engineering, and tuning hyperparameters of DQN.