RONALD WEIL JR.
rmw020@bucknell.edu ◊ linkedin.com/in/Ronald-Weil ◊ github.com/Junior-Weil ◊ https://ronaldweilportfolio.com

EDUCATION

Bucknell University, Lewisburg, PA

B.S. Computer Science & Engineering, Physics Minor - May 2025

• Relevant Coursework: Data Mining, Computer Architecture, Design and Analysis of Algorithms, Operating Systems, Full-Stack Web Development, Computer Networks and Security, Applied Electronics, Digital System Design, Electrical and Computer Engineering Analysis, Wave Mechanics & Quantum Physics

SKILLS

Languages:	Python, C, C++, SQL, Java, TypeScript, JavaScript, Elixir, HTML, Golang, Verilog
Frameworks & Libraries:	React Native, Next.js, Phoenix, TensorFlow, XGBoost, CatBoost, Vite
Tools & Environments:	Git, MariaDB, SQLite, Anaconda, Linux, Amplify, Lambda, S3, DynamoDB, Excell, PowerPoint, PowerBI
Concepts:	Machine Learning, Data Mining, OCR, Encryption, Embedded Systems, Algorithm Design, Full Stack Web Development, RISC-V

EXPERIENCE

Symptom Detective Startup June 2024 - January 2025
Full Stack App Development Internship *Houston, TX*

• Built and deployed an AI-OCR pipeline in Python using a custom inference model, Pillow for image preprocessing, and a SQLite3 database to parse ingredient labels from food packaging. This reduced manual logging effort for users, and after integration with the React (JavaScript, HTML, CSS) frontend, user feedback surveys showed higher satisfaction and fewer drop-offs during meal tracking.

• Designed and implemented a scalable ingredient-recognition feature by combining a third-party computer vision API, SciKit-Learn preprocessing, and a singleton design pattern for efficient database connection pooling. This minimized logging steps for users, directly improving engagement metrics and daily active usage after rollout.

• Conducted cost–benefit analysis of competing third-party APIs by benchmarking accuracy with confusion matrices on labeled test sets and consulting vendor teams for detailed metrics. Selecting the most accurate yet cost-effective option ensured financial sustainability of the feature while supporting the app's growing user base.

Bucknell Mechanical Engineering Department August 2024 - May 2025
Datadrive Backend Developer *Lewisburg, PA*

• Developed a C++/Qt run-control interface on a Raspberry Pi 4 to start/stop recording from 100+ sensors and trigger upload scripts. Automated a previously manual process, ensuring consistent datasets and reliable run workflows validated in on-vehicle tests.

• Designed a MariaDB schema and Python ingestion pipeline with checksum-based verification for wireless uploads to a Linux server, achieving ≥99% transfer success and reducing offload time to 1–2 minutes per run.

• Built a React xweb portal (JavaScript/HTML/CSS) for researchers to filter datasets by performance metrics and visualize results across runs, replacing hours of manual file merging with fast, self-serve analysis supported by full documentation.

PROJECTS

Kaggle Machine Learning Competition February 2024 - May 2024

Home Credit - Credit Risk Model Stability

• Collaborated with 4 data scientists in a Kaggle Credit Risk prediction challenge with 30,000 entrants, working on a dataset of 1.5M+ records and 500+ features.

• Engineered models with XGBoost and LightGBM, applying scikit-learn preprocessing, SMOTE oversampling, and shap explainability to handle a 97% imbalanced dataset and improve predictive performance.

• Produced feature analyses and visualizations with pandas, numpy, matplotlib, and seaborn, competing against experienced professional data scientists in a global benchmark competition and successfully delivering robust models.

LEADERSHIP

Community Impact Assistant May 2023 - August 2023
Bucknell Food Securities Program *Lewisburg, PA*

• Hosted volunteer events at the Lewisburg Community Garden and Milton Food Drive, coordinating 12–18 volunteers to plant, harvest, and cook meals, which were successfully donated to local families — ensuring consistent turnout and measurable community impact.