ALEXANDER JANIAK

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EDUCATION

Duke University **Durham, NC**
B.S. in Computer Science & B.A. in Philosophy; Minor in Mathematics *Class of 2025*

- GPA: 3.96/4.00 (Dean's List with Distinction); ACT: 36/36
- Notable Classes: Neural Networks & Deep Learning, Design & Analysis of Algorithms, Data Structures & Algorithms, Probability, Vector Calculus, Intro to Computer Systems, Matrices & Vector Spaces, Computer Network Architecture, Discrete Math for Computer Science
- Extracurriculars: Builder for Innovation Studio, Ignite Hackathon, Wayne Manor (SLG) Event Planner

PROJECTS

- Pentris-RL: Pentris reinforcement learning model trained using a deep Q network; Python; PyTorch; NumPy
- CLPM: A locally encrypted command-line password manager built with AES encryption; Python, SQLite, Click
- Pet Breed Classifier: A convolutional neural network using a 34-layer ResNet architecture trained on the Oxford-IIIT Pet Database; Python, TensorFlow, NumPy, Pandas
- Fractal Explorer: Unity application to explore the Mandelbrot and Julia fractal sets; C#, HLSL

SKILLS

- Languages: Python, Java, C, TypeScript/JavaScript, MATLAB, Racket, HTML, CSS, SQL, Polish
- Technologies: Git, React.js, PyTorch, Keras/Tensorflow, Scikit-Learn, NumPy, Pandas, Click, Unix, TCP/IP

EXPERIENCE

Zero Knowledge ML Web App **Remote**
Aztec Network Ecosystem Developer *July 2023 – September 2023*

- Circumvented blockchain's computational inefficiencies by building a full-stack application to provide an intuitive interface for running a machine learning model on the blockchain; Next.js, Typescript, Python, Keras/Tensorflow
- Created the first cryptographic neural network verification algorithm capable of ensuring model parameter privacy in Noir (Aztec's zero-knowledge proof-based domain-specific programming language).

Spice Finance **New York, NY**
Software Developer *May 2022 – August 2022*

- Helped raise $1.7M of pre-seed venture capital funding at a $20M valuation by designing and implementing a decentralized finance product focused on providing liquidity to customers' digital assets.
- Developed in Python, a capital allocation algorithm for digital asset-backed lending using NumPy, a full-scale API with FastAPI to broadcast proprietary digital asset valuations, and an exotic option pricing model in Python to determine loan values in real time.

NJIT Provost Summer Research Program **Newark, NJ**
Research Intern under Professor Shahriar Afkhami *June 2019 – August 2019*

- Researched and modeled the effects of several physical parameters (*i.e.*, biometric data) on the dynamics of magnetic-targeting chemotherapy drugs using MATLAB's Machine Learning Toolbox.
- Computed a realistic range of injection locations and blood vessel radii for implementing magnetic drug targeting against invasive tumors.
- Optimized parameters to capture 80% of the magnetic particles using gaussian process, polynomial, and spline regression machine learning models.

ARCC: Pacific Northwest Gap Semester ***Pacific Northwest, U.S.***
Volunteer Team Member *February 2021 – May 2021*

- Cleared forest understory in the conservation effort against invasive Kāhili ginger in Volcanoes National Park under the guidance of Ranger John Stallman.
- Volunteered at a local Washington ultra-sustainable permaculture farm and commune.