

Davi Klitz

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EDUCATION

Columbia University

Bachelor of Science in Computer Science, Pre-Med Track

New York City, NY

Aug. 2025 – May 2029

École Internationale Le Verseau

High School Diploma, Advanced Sciences and Mathematics

Wavre, Belgium

Aug. 2019 – May 2025

EXPERIENCE

Undergraduate Researcher

Sep. 2025 – Present

Columbia University Irving Medical Center, Laboratory of AI & Biomedical Science

New York, NY

- Conducting research under Prof. Junhao Wen on a machine learning framework to identify and model subtypes of Alzheimer's disease using neuroimaging and genetic data.
- Developing a diffusion-based generative model building on prior GAN-based approaches (Smile-GAN, Surreal-GAN, Gene-SGAN) to improve generative accuracy and clustering stability.
- Optimizing diffusion, prior, and decoupling losses to uncover distinct, biologically meaningful disease subtypes, advancing precision diagnostics in neurodegenerative research.

Co-Founder & Head of Technology & Marketing

Aug. 2023 – Jul. 2025

FlyHigh Enterprise

Brussels, Belgium

- Co-founded a sustainable brand repurposing recycled hot-air balloon tarps into eco-friendly consumer products, combining creativity, entrepreneurship, and environmental responsibility.
- Built the company website (flyhightenterprise.com), managed social media and customer communications, and developed a social-impact model donating a portion of profits to nonprofit partners.
- Helped the company gain national recognition through major media coverage, generating over \$13,000 in revenue and placing 2nd out of 450 teams in a national entrepreneurship competition.

Founder & President

Sep. 2023 – Jun. 2025

École Internationale Le Verseau Robotics Club

Wavre, Belgium

- Founded and led the first robotics club at school, fostering hands-on learning in engineering and computer science.
- Led a student team in designing and programming autonomous drones.
- Organized workshops introducing peers to Arduino, Python, and Blender.

PROJECTS

Machine Learning Model for Autism Detection | *Python, Scikit-learn, Pandas, NumPy*

2024 – 2025

- Trained and evaluated a machine learning model to classify Autism Spectrum Disorder (ASD) based on standardized questionnaire responses.
- Collaborated with a speech-language pathologist to ensure clinical applicability and data interpretation accuracy.
- Optimized model performance through feature selection, hyperparameter tuning, and cross-validation.

Deep Learning CNN for MRI Tumor Recognition | *Python, PyTorch, ResNet-18, AdamW*

2025

- Developed a convolutional neural network leveraging the AdamW optimizer and ResNet-18 architecture for MRI tumor classification.
- Achieved 96% accuracy in predicting the presence of brain tumors from MRI scans.
- Implemented data augmentation, normalization, and model regularization techniques to improve generalization.

Object-Oriented Video Poker Game | *Java, OOP, GUI*

2024

- Developed an interactive Video Poker game using clean object-oriented design with modular `Card`, `Deck`, `Player`, and `Game` classes.
- Implemented a GUI for card selection, betting flow, and real-time result updates; replaced terminal-only gameplay.
- Added Fisher-Yates shuffle and full poker-hand evaluation (pairs, straights, flushes, full house, etc.).

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL, JavaScript, R

Frameworks: Flask, FastAPI, React, Node.js, TensorFlow, PyTorch, Scikit-learn, OpenCV, JUnit, WordPress

Developer Tools: Git, Docker, Google Cloud Platform, VS Code, PyCharm, Jupyter, Linux, IntelliJ

Libraries: NumPy, pandas, Matplotlib, Seaborn, SciPy, Keras, Hugging Face Transformers

Design & Engineering Software: Blender, AutoCAD, SolidWorks, Fusion 360, Adobe Photoshop