

Davi Klitz

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EDUCATION

Columbia University <i>Bachelor of Science in Computer Science, Pre-Med Track</i>	New York City, NY Aug. 2025 – May 2029
École Internationale Le Verseau <i>High School Diploma, Advanced Sciences and Mathematics</i>	Wavre, Belgium Aug. 2019 – May 2025

EXPERIENCE

Undergraduate Researcher <i>Columbia University Irving Medical Center, Laboratory of AI & Biomedical Science</i>	Sep. 2025 – Present 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 <i>FlyHigh Entreprise</i>	Aug. 2023 – Jul. 2025 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 (flyhighentreprise.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 <i>École Internationale Le Verseau Robotics Club</i>	Sep. 2023 – Jun. 2025 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 <i>Python, Scikit-learn, Pandas, NumPy</i>	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 <i>Python, PyTorch, ResNet-18, AdamW</i>	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 <i>Java, OOP, GUI</i>	2024
– Developed an interactive Video Poker game using clean object-oriented design with modular <code>Card</code> , <code>Deck</code> , <code>Player</code> , and <code>Game</code> 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