SANDRO AMAGLOBELI

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EDUCATION

Stony Brook University, Stony Brook, NY — Expected May 2027
Master of Science in Computer Science — **GPA:** 3.84/4.00
- **Coursework:** Computer Vision, Data Science, Hybrid Systems

Hofstra University, Hempstead, NY — May 2025
Bachelor of Science in Computer Science and Mathematics — **GPA:** 3.97/4.00
- **Coursework:** Artificial Intelligence, Machine Learning, NLP, Probability & Statistics, Linear Algebra, Software Engineering, DSA

WORK EXPERIENCE

Public Service Enterprise Group (PSEG), Newark, NJ — June 2023 - Present
Trading Operations Risk Intern, Software Engineering
- Automate daily reconciliation of published energy auction nodal prices using Python, enhancing processing speed and reliability
- Build auction ETL pipelines using Selenium/BeautifulSoup with retries and schema checks for PSEG trading workflows
- Implement an async FastAPI monitoring dashboard using WebSockets, APScheduler, and aiohttp for data and log monitoring
- Migrate VBA/VBS/Batch to Python/SQL with structured logging, email alerts, and a GUI failover downloader during outages

Hofstra University, Hempstead, NY — August 2024 – Present
Machine Learning Research Assistant (NIH R15-EB029172)
- Contribute to NIH-funded project developing CNN models for brain MRI tumor localization under undersampling artifacts
- Co-author peer-reviewed paper for SPIE Medical Imaging 2026 (oral presentation accepted); presenting at JMM '25 and '26
- Engineered FLNet using modified EfficientNet-B1 in PyTorch, trained on 8,240 MRI images across varying artifact conditions
- Co-designed V1FLNet variant with Gabor-filter preprocessing to simulate visual cortex, improving alignment with human observers
- Achieved 84% accuracy surpassing humans (82%) and SDOG4 (68%); training on extreme artifacts enables OOD generalization

Maurice A. Deane School of Law at Hofstra University, Hempstead, NY — December 2022 – June 2025
Academic Intern
- Spearheaded the development of an AI chatbot to guide users through filing claims with the NY State Small Claims Court
- Designed an ML system to simplify disability evaluation, classifying descriptions into 100+ subcategories with 90% accuracy
- Utilized Python, Rasa, and JavaScript for chatbot development; Trained NLP models to identify damage types in users' inputs
- Led the project's second phase, implementing translations and form autofill features based on user inputs and court location

RESEARCH & SOFTWARE PROJECTS

Blind Inverse Game Theory (Blind-IGT) | *Co-Author* | *arXiv* — *Fall 2025*
- Co-authored Blind-IGT to resolve multiplicative scale ambiguity in entropy-regularized Quantal Response Equilibrium
- Designed Normalized Least Squares (NLS) estimator for joint recovery of reward θ and temperature τ with $O(N^{-1/2})$ rates
- Generalized to entropy-regularized Markov games; proved robustness under unknown dynamics and validated via simulations

Reachability-Constrained RRT* for Car-Trailer Systems | *Author* | *Paper* — *Fall 2025*
- Built RC-RRT* parking planner for car-trailer nonholonomic dynamics using reachability-guided expansion and tube-verified edges
- Verified hitch safety via 1D zonotope interval propagation keeping $|\gamma| \leq 70^\circ$ under steering and hitch angle sensor uncertainties
- Engineered conservative linearization inflated footprints and delivered 100% success with up to 49× speedup vs RRT* & Hybrid A*

Multi-View Generalizable and Animatable Gaussian Head Avatar | *Lead Developer* — *Fall 2025*
- Extended GAGAvatar to multi-view with visibility-aware voxel fusion and dual-layer Gaussian lifting to improve completeness
- Fine-tuned via LoRA to reduce artifacts and improve perceptual quality, achieving CosSim 0.721 and LPIPS 0.623 on VFHQ data
- Integrated NVIDIA Audio2Face with 52-D blendshape to FLAME mapping achieving lip-sync LSE-D 9.46 and LSE-C 5.89

3D Gaussian Splatting for Scene Reconstruction | *Lead Developer* — *Spring 2025*
- Architected a CUDA-accelerated 3D Gaussian Splatting pipeline with a real-time viewer for photorealistic, navigable scenes
- Created a lightweight cross-platform viewer, enabling real-time exploration and interaction with reconstructed 3D spaces

TECHNICAL SKILLS

Languages: Python, C, C++, C#, Java, JavaScript, SQL, R, Stata
ML/Data Science: PyTorch, CUDA, OpenCV, Scikit-learn, Hugging Face, cvxpy, NumPy, Pandas, SciPy, Matplotlib, Seaborn, Rasa NLP
Web/Backend: React, Vite, Node.js, Flask, Django, REST APIs, HTML/CSS, Bootstrap, PostgreSQL, MongoDB, Oracle SQL, AWS
Tools & Methods: Git, Docker, Agile/Scrum, Linux, Jupyter, MATLAB, Tableau, LaTeX, Selenium, BeautifulSoup, Scrapy
Design: Adobe Creative Suite (Photoshop, Illustrator, InDesign, Lightroom, Premiere Pro), MS Office

HONORS AND ACHIEVEMENTS

Interdisciplinary Undergraduate Research Community (IURC) Award — 2025
Casualty Actuarial Society (CAS) Student Central Independent Summer Program Digital Badge — 2024
First place in hackathon organized by Google Developer Student Clubs on *United Nations Sustainable Development Goals* — 2022
Participant in JPMorgan Chase & Co. Software Engineering Virtual Experience Program — 2022
Pi Mu Epsilon (Math Honor Society); Honorable Mention at the Mathematical Contest in Modeling (MCM) — 2022–2024

LANGUAGES & LEADERSHIP

Languages: Georgian (Native), English (Fluent), Russian (Advanced)
Leadership: Treasurer (Gamma Iota Sigma), Peer Teacher (Elementary Statistics), Resident Assistant, theCoderSchool Code Coach