

PETER A. SAYEGH

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EDUCATION

Columbia University MS in Electrical Engineering (EE) – Nikola Tesla EE Scholarship Coursework: Digital Signal Processing, Analog Electronic Circuits, Power Electronics, MOS Transistors Activities: Department Representative for EE within the Engineering Student Graduate Council (EGSC)	New York, NY Expected Dec 2026
Ecole Polytechnique BS in Mathematics and Physics , GPA: 3.75/4.0 Coursework: Convex Optimization, Stochastic Processes, Electrodynamics, Advanced Quantum Physics, Thermodynamics, Statistical Physics, Condensed Matter, Algorithms, Numerical Analysis, Web Programming, Object-Oriented Programming, Machine Learning Activities: President of the Mental Health Awareness Committee	Palaiseau, FR Jun 2025

RESEARCH EXPERIENCE

Ecole Polytechnique - Center for Theoretical Physics Undergraduate Research Team Project - Magnetic Levitation Systems • Designed and constructed a scaled Maglev train prototype using magnetic field analysis, achieving 96% theoretical validation • Extrapolated experimental results to a real Electromagnetic Suspension (EMS) engine scale, predicting capacity within 2% of Shanghai Maglev	Palaiseau, FR Feb 2024 - Jul 2025
Ecole Polytechnique - Hydrodynamics Laboratory Bachelor Thesis Research Intern • Devised a neural network framework leveraging JAX to model Rogue Waves, with less than 0.5% error • Enhanced model performance via causal training algorithms, reducing convergence time by 60% • Applied numerical wave analysis methods, attaining a 2% average L2 error against analytical solutions	Palaiseau, FR Jan 2025 - Mar 2025
Ecole Polytechnique - Irradiated Solids Laboratory Undergraduate Research Assistant • Developed MATLAB algorithms for high-frequency (1 THz) wave simulation in nanoscale materials • Characterized acoustic signal attenuation and reflection in the range of 10-100nm thickness across multiple interfaces	Palaiseau, FR Jan 2024 - Jun 2024

PROFESSIONAL EXPERIENCE

TriSpan LLP Private Equity Intern • Streamlined Profit & Loss (P&L) reporting across 10 portfolio companies using Excel • Conducted Leveraged Buyout (LBO) modeling using Excel and Bloomberg terminals • Identified investment opportunities across five industry sectors • Drafted valuation reports using Discounted Cash Flow (DCF) analysis for portfolio companies worth \$200M+ in assets	New York, NY Jul 2024 - Aug 2024
Self-employed Academic Tutor • Tutored 15+ students over three years in advanced mathematics and physics, strengthening conceptual understanding • Developed customized lesson plans and strategies, achieving 42% average grade improvement	Paris, FR Oct 2021 - Jun 2024

TECHNICAL SKILLS

Programming Languages: Python, C++, Arduino, R, MATLAB, HTML, CSS, JavaScript, QML
Data Science and Machine Learning: TensorFlow, Keras, JAX/Optax, scikit-learn, NumPy, SciPy, pandas, statsmodels
AI Frameworks: DSPy, Agno, Gepa
Scientific Computing: QuTiP, Scikit-HEP, PySpice
Hardware and Circuit Design: Cadence Spectre, PLECS, LTSpice
Tools and platforms: LaTeX, Git, Jupyter
Languages: French (Native), Arabic (Native), German (Advanced), Spanish (Intermediate)