PETER A. SAYEGH

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EDUCATION

Columbia University — New York, NY
MS in Electrical Engineering - Tesla Scholar — Expected Dec 2026
Coursework: Digital Signal Processing, Analog Electronic Circuits, Power Electronics, MOS Transistors

Ecole Polytechnique — Palaiseau, FR
BS in Mathematics and Physics, GPA: 3.75/4.0 — Jun 2025
Coursework:

- Mathematics: Analysis, Algebra, Statistics, Optimization, Stochastic Processes
- Physics: Mechanics, Electrodynamics, Quantum Physics, Thermodynamics, Statistical Physics, Condensed Matter
- Computer Science: Python, Algorithms, Numerical Analysis, Web Programming, C++, Machine Learning

Community involvement:

- President of Mental Health Awareness Committee
- Awareness campaign organizer about unequal access to education in partnership with Action-Education

RESEARCH EXPERIENCE

Ecole Polytechnique - Center for Theoretical Physics — Palaiseau, FR
Undergraduate Research Team Project - Maglev Systems — Feb 2024 - Jul 2025

- Constructed scaled Maglev train prototype using magnetic field analysis, achieving 96% theoretical validation
- Applied model to a real Electromagnetic Suspension (EMS) train, predicting capacity within 2% of Shanghai Maglev

Ecole Polytechnique - Hydrodynamics Laboratory — Palaiseau, FR
Bachelor Thesis Research Intern — Jan 2025 - Mar 2025

- 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

Ecole Polytechnique - Irradiated Solids Laboratory — Palaiseau, FR
Undergraduate Research Assistant — Jan 2024 - Jun 2024

- Developed MATLAB algorithms for high-frequency (1 THz) wave simulation in nanoscale materials
- Characterized acoustic signal attenuation and reflection in ranging of 10-100nm thickness across multiple interfaces

PROFESSIONAL EXPERIENCE

TriSpan LLP — New York, NY
Private Equity Intern — Jul 2024 - Aug 2024

- 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

Self-employed — Paris, FR
Academic Tutor — Oct 2021 - Jun 2024

- 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

TECHNICAL SKILLS

- Programming Languages: Python, C++, Arduino, R, MATLAB
- Web Development: HTML, CSS, JavaScript, QML
- Data Science & Machine Learning: TensorFlow/ Keras, JAX/Optax, scikit-learn, NumPy, SciPy, pandas, statsmodels
- Scientific Computing: QuTiP, Scikit-HEP, Pspice
- Tools & platforms: LATEX, Git, Jupyter, Microsoft Office Suite (Word, PowerPoint and Excel)
- Languages: French (Native), Arabic (Native), German (Advanced), Spanish (Intermediate)

CERTIFICATIONS

MathWorks: MATLAB Onramp
Wall Street Prep: Accounting & Financial Statement Analysis
Udemy: Signals and Systems: From Basics to Advance