# Oliver Baccay

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Availability: May – December 2026

## Education

**Northeastern University** Boston, MA
*B.S. Mathematics, Minor: Data Science* May 2028

- GPA: 4.0/4.0
- Relevant Coursework: Probability and Statistics, Macroeconomics, Advanced Programming with Data, Business Statistics, Calculus III, Differential Equations & Linear Algebra, Foundations of Data Science, Physics II

**Northeastern University London** London, UK
*Year-Long Study Abroad* Sep 2024 - May 2025

## Relevant Experience

**Nicolaysen Insurance Agency** Chappaqua, NY
*Insurance Intern* July 2025 - Aug 2025

- Improved quoting efficiency by 66% by centralizing initial quotes, reducing required staff while maintaining output.
- Generated 25+ personal line quotes by analyzing risk profiles and comparing carrier pricing, identifying cost-saving options.
- Audited 200+ client files in Applied Epic and Excel, ensuring policy data accuracy, renewals, cancellations, & modifications.

**Sarah Lawrence College** Bronxville, NY
*Physics Research Intern (Nuclear Magnetic Resonance, NMR)* May 2024 - Aug 2024

- Conducted T1 & T2/T2* relaxation experiments using benchtop NMR to collect Magnetic Resonance signal datasets.
- Analyzed experimental data via Fourier transforms in Excel, creating detailed visualizations for research documentation.
- Applied quantum mechanical principles to analyze complex signal transformations across frequency and time domains.

## Leadership and Involvement

**Algorithmic Investments & Quantitative Solutions** | *Co-Vice President & Researcher* Sept 2025 - Present
**The Actuarial Club** | *Active Member* Sept 2025 - Present
**DATA Club** | *Snowball Program* Sept 2025 - Present
**Northeastern London STEM Society** | *Co-Founder & Secretary* Sept 2024 - May 2025

## Actuarial Exams

- Exam P (Probability) Sitting - Jan 2026

## Relevant Projects

**Life Insurance Premium Estimation Calculator** | *Python, Shiny, NumPy* Sep 2025

- Developed an interactive Shiny app to estimate life insurance premiums by modeling mortality probabilities from age, BMI, sex, and nicotine use, incorporating actuarial-style loadings and risk adjustments to calculate the death benefit.
- Implemented a dynamic interface to enable real-time premium updates, simulating practical pricing tools.

**Music Genre Classification Model** | *Python, scikit-learn, XGBoost, seaborn, matplotlib, pandas* Apr 2025

- Implemented and evaluated machine learning models (KNN, Random Forest, SVM) to classify 17,000+ songs into 11 genres using audio features, achieving 50%+ accuracy with SVM.
- Created heatmaps and clustering plots to analyze feature importance and clustering (K-Means), highlighting key predictors.

## Skills

**Technologies:** Python, Excel, SQL, Microsoft Office Suite, Google Suite
**Software/Tools:** Pandas, Seaborn, Plotly, Scipy, NLTK, Statsmodels, Scikit-Learn, Github, HoloViz
**Interests:** Electric Guitar, Bouldering, Audio Engineering, Content Creation, Premier League, Digital Cameras