

# Brayden Adcox

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## EDUCATION

### Pacific Lutheran University

*Bachelor of Arts in Physics, Minor in Mathematics, GPA: 3.9/4.0*

*Activities: Computer Science Club, ICPC (Top 25% regional), NCAA Baseball*

Tacoma, WA

*Expected: May 2026*

### Columbia University - Planned Transfer in 2026

*Bachelor of Science in Computer Science (ABET - Accredited Transfer)*

New York, NY

*Expected: May 2028*

## EXPERIENCE

### Research Assistant

*Pacific Lutheran University*

June 2025 – July 2025

*Tacoma, WA*

- Developed a predictive research system combining market sentiment with historical data under Dr. Renzhi Cao.
- Implemented a TensorFlow pipeline processing **630K+** news articles, ensuring reliable scaling of large data.
- Debugged and optimized BiLSTM models, improving predictive performance by **38%**.
- Applied FinBERT embeddings to strengthen NLP pipelines for domain-specific language modeling.

### International Collegiate Programming Competition

*University of Washington*

Nov. 2024

*Tacoma, WA*

- Represented PLU in the 2024 ICPC Pacific Northwest Regional programming contest.
- Solved **6** algorithmic problems in Python using data structures and graph search within a **5**-hour contest.
- Ranked in the top **25%**, tying for **3rd** at site through effective team-based problem solving.

## PROJECTS

### ML Fraud Detection Inference System | *Python, FastAPI, Docker, Pydantic*

- Designed and containerized a production-grade ML inference service for payment fraud risk scoring.
- Deployed the service to Google Cloud Run with public HTTPS access and serverless autoscaling.
- Implemented strict request validation with explicit HTTP **400/503** semantics.
- Built versioned model loading with health/readiness checks and structured logging.

### AI Tech Interview Prep Tool | *Python, Java, OpenAI*

- Developed an **AI-powered Discord bot** supporting interactive technical interview preparation.
- Designed command handling using **discord.py** to manage user interactions and responses.
- Integrated **OpenAI APIs** to generate relevant interview-style prompts and practice.
- Handled conversation flow, error cases, and basic state management within user sessions.

### Bitcoin Price Forecasting Model | *Python, RoBERTa, PyTorch, Pandas*

- Fine-tuned a forecasting pipeline combining REST-based sentiment feeds from **2.6M+** tweets with financial data.
- Designed a modular BiLSTM trained on **12** months of market history, sustaining a **25%** accuracy improvement.
- Applied RoBERTa preprocessing to noisy social media data, reducing prediction error by **21%**.
- Implemented data weighing strategies to prioritize relevant data, raising output reliability by **14%**.

## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript, TSX, HTML/CSS

**Frameworks:** React, Next.js

**Developer Tools:** Git, GitHub, VSCode

**Libraries/APIs:** PyTorch, TensorFlow, OpenAI, Pandas, NumPy, yFinance