Anthony Tom

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EDUCATION

Carnegie Mellon University Pittsburgh, PA

B.S. in Computer Science Expected May 2028

Relevant Coursework: Concepts in Artificial Intelligence, Data Structures and Algorithms, Computer Systems, Software Engineering, Imperative and Functional Programming, Theoretical Computer Science

WORK EXPERIENCE

CMU School of Computer Science Pittsburgh, PA

Python Programming Teaching Assistant (15-112) Jan 2026 - May 2026

- Taught Python and problem solving to 50+ students weekly through recitations and office hours covering recursion, backtracking, dynamic programming, OOP, Monte Carlo simulations, runtime complexity, and data structures
- Diagnosed and resolved edge-case failures and logical bugs under time constraints
- Organized hackathons for 400+ students, provided feedback on student SWE projects, and graded 20+ quizzes weekly

Asset Bridge Realty Sacramento, CA

Software Engineering Intern May 2025 - Present

- Architected a property listing platform via HTML, CSS, and JS for Asset Bridge Realty optimized for mobile use
- Drove 100+ clients to live listings by engineering a physical-to-digital QR code conversion funnel on for-sale signs and optimized client experience with FTP based updates, domain configuration, and real-time inventory updates
- Reduced manual workflow by 80% for 20+ employees by implementing an internal operations platform in Excel which automates scheduling and transaction tracking with conditional formatting and script-based logic

PROJECTS

MNIST Neural Network Project Jun 2026

- Implemented a feedforward neural network in NumPy without ML frameworks, manually deriving backpropagation and gradient descent from first principles
- Trained on MNIST handwritten digit dataset to 96.5% accuracy on 10000-image test set
- Built modular forward/backward passes, sigmoid activation, and cost functions; serialized model weights for reuse

NodeBB Open-Source Software Development Project Jan 2026 - May 2026

- Designed and deployed a fault-tolerant LLM translation microservice (FastAPI, Ollama, Docker Compose) integrated into a Node.js forum with automated CI/CD and mock testing
- Implemented typo-tolerant fuzzy search feature for NodeBB open-source forum software, adding UI dropdown with i18n support for en-US and en-GB
- Integrated ts-standard TypeScript linter into NodeBB codebase, exposing 280K+ formatting issues across 870 files and documenting pros/cons of static analysis tooling for contributor evaluation

Classic Chess AI Oct 2024 - Dec 2024

- Implemented depth-limited game-tree search with heuristic board evaluation for autonomous move selection
- Designed rule engine for legal move generation, capture handling, and check detection across game states
- Developed interactive UI with real-time move validation and board rendering in CMU Graphics

SKILLS AND INTERESTS

- **Technical Skills:** Python (NumPy, Pandas, PyTorch), Rust, C, SQL, HTML+CSS+JS, x86-64 Assembly, LaTeX, MATLAB
- **Interests:** Distance Running, Musical Instruments (Piano, Saxophone, Guitar, Drums), Puzzles
- **Certifications:** Certified Associate in Project Management (PMI) 2025