Matthew Chin

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Education

University of Maryland College Park, MD
Bachelor of Science in Computer Science, Minor in Business *Jan. 2024 – May 2027*

Experience

Undergraduate Data Research Assistant Feb. 2025 – Present
Digital Media Lab, UMD *College Park, MD*

- Build Chrome Extension + Next.js frontend to scrape and visualize live news metadata, using Chart.js, TypeScript, and DOM parsing
- Designed interactive dashboards and visualizations plotting engagement metrics, enabling researchers and local news anchors to analyze user interaction patterns
- Implemented live data pipelines for journalism platforms (e.g., Baltimore Banner), improving efficiency of content analysis

Development Intern Jun. 2025 – Present
Colexia *New York, NY*

- Built Python + BeautifulSoup4 scrapers to index/organize product datasets, improving dataset standardization for external ML models
- Contributed to Firebase-based wait list website to support early-stage startup growth and exposure
- Automated product ingestion pipeline into xlsx folders using Google Drive API, accelerating data reports by 70%

Helpdesk IT Technician Aug 2020 – May 2023
Stone Rehabilitation & Senior Living *Newton Upper Falls, MA*

- Shadowed and co-delivered Tier 1/2 helpdesk support for 200+ staff, resolving hardware, software, and networking issues.
- Configured and maintained workstations, printers, internal system hardware, reducing downtime and ensuring HIPAA compliance.
- Trained staff on new systems and provided on-call technical support, creating a reliable, user-friendly IT environment

Projects

Pseudo Random Number Generation Lab | *Linux (Ubuntu), C, Cryptography*

- Investigated weaknesses in pseudo-random number generation within cryptographic systems.
- Implemented key-generation algorithms in C, highlighting predictable patterns exploitable in AES encryption.
- Compared /dev/random vs. /dev/urandom, analyzing entropy, blocking, and randomness quality.
- Conducted entropy analysis of kernel randomness sources (keyboard, disk I/O, interrupts).
- Applied statistical tools (ent) to assess randomness, strengthening 128/256-bit key generation methods.

Temperature Time Machine | *Python, Data Science*

- Built a pipeline analyzing 57,000+ records over 155 years of NOAA/NASA climate data.
- Applied multivariate regression, Fourier Transform, and statistical tests to identify climate patterns.
- Automated data ingestion and error handling, outputting animated time-series visualizations.
- Produced publication-grade statistical reports demonstrating long-term warming cycles.

Smart Story Agent | *Next.js, TypeScript, AI*

- Developed a full-stack web app analyzing live news articles with Claude API + custom algorithms for engagement metrics.
- Designed interactive UI with Tailwind CSS + Framer Motion, increasing usabiity and visualization quality.
- Integrated PostHog analytics for user behavior tracking and engagement insights.

VFC Community App | *Next.js, TypeScript, AI*

- Contributed to a cross-platform serving 250+ users, building event management, push notifications, and MFA authentication.

- Built reusable component library + custom hooks that reduced code duplication by 40%

Baltimore Banner Scraper | *JavaScript, HTML, CSS, Chart.js*

- Engineered a Chrome Extension (Manifest v3) to scrape article metadata (word count, images, headers) and visualize results in real time.
- Leveraged Web Storage + DOM parsing for efficient data restructuring and UI rendering

Minesweeper Game Clone | *C++*

- Designed randomized mine placement algorithms with adaptive board sizes and difficulty levels.
- Implemented a dynamic UI with color-coded indicators for mine proximity.
- Optimized memory management for large board states and recursive operations.

Technical Skills

Languages: Java, Python, C , (Rust, OCaml, C++)
Frameworks: React, Next.js, React Native, Firebase, Tailwind, Chart.js
Developer Tools: Git, PostHog, Framer Motion, BeautifulSoup4, Chrome Extensions API, Claude API
Data: Pandas, NumPy, MATLAB, SciPy, Statsmodels
Certifications: Tata Cybersecurity Job Simulation, Mastercard Cybersecurity Job Simulation, AWS ML Solutions (Coursera), CompTIA Sec+ (in progress), SEEDLabs PRNG Lab (Ubuntu Linux VM 20.4)
Other: Seal of Bi-literacy (Spanish & English, 2022)
Coursework: Cryptography, Data Structures & Algorithms, Organization of Programming Languages, Computer Systems (C), OOP I/II, Discrete Structures, Linear Algebra, Applied Statistics