CHARLES K. GIFFORD

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EDUCATION

Boston College, Chestnut Hill, MA — Expected: May 2028
Bachelor of Science: Computer Science; Minor: Mathematics
Relevant Coursework: Linear Algebra, Randomness & Computation, Algorithms, Multivariable Calculus, Software Engineering, Computer Systems, Logic & Computation, Intro to Abstract Math, CS2, CS1
Honors: Red Bandanna Leadership Fellow (0.23% of students)

EMPLOYMENT

Data Analytics Intern, *The Port Authority of New York and New Jersey*, New York, NY — May 2026 - Aug 2026

- Engineered an end-to-end Python and SQL pipeline cross-referencing 2,200+ fleet vehicles against an Oracle database, identifying 31% as out of compliance with $100K+ in outstanding tolls; presented findings to the Deputy Director through an interactive Power BI dashboard.
- Developed an NLP pipeline to classify 112,000+ multilingual E-ZPass dispute records by language, applying statistical detection and quality filters to isolate clean English records for LLM analysis.
- Built interactive geospatial dashboards (Python, Folium, JavaScript) with heatmaps and cross-filtering to investigate transponder fraud, flagging 30+ fleet tags operating outside the NY/NJ region; adopted by Revenue Recovery and reviewed by the Executive Director.

Teaching Assistant, *Boston College Computer Science Department*, Chestnut Hill, MA — Aug 2025 - Present

- Lead weekly discussion sections and daily office hours for 50+ students learning Python fundamentals, translating lecture concepts into worked examples and live debugging.
- Grade assignments and give targeted feedback on efficiency, readability, and correctness to sharpen students' problem-solving and algorithmic thinking.
- Partner with the professor to proctor exams, refine course content, and author supplemental coding exercises used across all sections.

PROJECTS

Creator, *Strava Running Analytics*, Dashboard *(Python, PostgreSQL, SQL, Tableau)* — Oct 2026 - Present

- Built an end-to-end Python pipeline ingesting 341 runs (1,100+ miles) of personal Strava running data via OAuth into PostgreSQL, enriched with historical weather from the Open-Meteo API.
- Modeled marathon readiness with a Riegel race-time projection against a Boston qualifying target, and devised SQL views computing the acute-to-chronic workload ratio (ACWR) across 1,530 days to flag injury risk, with 34% of days in the optimal 0.8 to 1.5 range.
- Quantified weather's effect on pace through OLS regression controlling for distance and fitness trend, and published an interactive Tableau dashboard tracking predicted marathon time and training load.

Co-Founder, *W2W-Sports*, W2W-Sports.com *(Python, Flask, PostgreSQL, ESPN API, Vercel)* — Oct 2025 - Present

- Designed a five-factor watchability scoring algorithm across 10+ sports leagues, weighting variables such as rivalry, marketability, and competitiveness to rank 50+ live sporting events in real time daily.
- Built a full-stack Flask web application integrating the ESPN API to ingest, process, and score live game data, serving ranked results dynamically to 30+ weekly users across multiple sport verticals.
- Developed an automated email digest system using Resend and Supabase, deploying Vercel Cron jobs to deliver personalized sport rankings to 15+ subscribers on a scheduled cadence.

EXTRACURRICULAR

Student Leader & Big Brother, *BC Bigs*, Chestnut Hill, MA — Oct 2024 - Present

- Lead biweekly family meetings and coordinate campus-wide events such as "Meet the Bigs Day" for Bigs and Littles across multiple partner schools, while mentoring a Boston Renaissance Charter School student through 50+ weekly sessions.
- Selected to participate in a conference with Lone Star BBBS regarding the success of BC Bigs and ways to implement similar programs in other universities such as SMU, Texas A&M, and UT Austin.

TECHNICAL SKILLS

- **Languages**: Python (Pandas, NumPy, Matplotlib, Folium, openpyxl), SQL, Java, JavaScript (React), HTML/CSS
- **Tools**: Tableau, Power BI, Excel, Git, Oracle DB, PostgreSQL