

BEN SCHMIDT

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EDUCATION

Virginia Tech– Blacksburg

May 2028

Bachelor of Science– Computer Science

3.88 GPA

Minors: Mathematics, Artificial Intelligence (AI)

Dean's List [Fall 2024, Spring 2025, Fall 2025, Spring 2026]

EXPERIENCE

Undergraduate Student Researcher (BURGS Cohort)

August 2026 - Present

Virginia Tech Department of Computer Science– Blacksburg, VA

- Researched AI safety and reward-hacking defenses for MARCO, an autonomous agent system optimizing high-performance GPU code.
- Built Python automated testing pipelines and a 20-strategy adversarial benchmark to measure the reliability of grading safeguards against unfaithful optimizations.

Data And Analytics Intern

June 2026 - August 2026

Identity Digital

- Independently engineered an ML interpretability web application using Python and Streamlit to demystify black-box CatBoost models, visualizing SHAP feature importance across multiple dynamic analytical modes.
- Architected an "Auto Interactions" algorithm utilizing NumPy and Pandas to identify key feature combinations, mathematically converting Tree SHAP values into absolute probability shifts with custom confidence intervals.
- Streamlined data pipelines and processing by pulling high-volume Parquet datasets (100K+ rows) directly from Amazon S3 and revamping complex SQL queries to fulfill ad-hoc marketing reporting requests.
- Collaborated with company executives to support international STEM education, hosting an Anguillan delegation for campus tours and traveling to Anguilla to assist in leading a youth robotics initiative.

Software Engineer

August 2025 - Present

StudyGuido via BITS– Blacksburg, VA

- Engineered a Retrieval-Augmented Generation (RAG) backend for an AI-powered learning platform, utilizing Python, FastAPI, and Amazon S3 to handle textbook ingestion, chunking, and embedding pipelines.
- Optimized context retrieval by implementing a two-stage search pipeline: querying a PostgreSQL (pgvector) database via cosine similarity, then re-ranking results with a BERT Cross-Encoder, improving median context relevance by 33%.
- Co-architected the platform's Mastery module, supplying textbook-grounded RAG context to the Gemini API to facilitate conversational AI tutoring based on the Feynman technique.
- Slashed AI flashcard generation latency by building a PostgreSQL caching layer and spaced-repetition algorithm, reducing LLM dependency while ensuring data persistence with automated cron cleanups.

SKILLS

Languages: Python, Java, C, SQL, Bash, Rust

Frameworks & Libraries: NumPy, Pandas, React, Streamlit

Developer Tools: Git, Bitbucket, GitHub CI/CD, VS Code, Cursor, Eclipse, Jira, Claude Code

Data & DevOps: Google BigQuery, Apache Airflow, AWS S3, AWS EC2, Docker, Linux

CAMPUS INVOLVEMENT

• **Treasurer, Building Impactful Technology with Students (BITS):**

August 2025 - Present

Manage club finances and support cross-functional student teams deploying real-world tech solutions.

• **Treasurer, G.E.R.M.A.N. Club:** Direct financial operations and manage a \$30,000 annual budget for a 75-member fraternity.

February 2026 - Present