Alin-Teodor Bratu

bratualinteodor@gmail.com | LinkedIn | GitHub | **+40 773 307 234**

Education

National University of Science and Technology POLITEHNICA Bucharest — Bucharest, Romania
Bachelor in Control Engineering, Computer Science and Inteligent Systems — *Sep. 2024 – Jun. 2028*

National Computer College Tudor Vianu — Bucharest, Romania
Highschool degree in Computer Science — *Sep. 2020 – Jul. 2024*

Experience

Teaching Assistant — Oct. 2025 – Present
National University of Science and Technology POLITEHNICA Bucharest — *Bucharest, Romania*

- Proposed coding problems and projects that combine **Finance with Data Structures and Algorithms**.
- Offered help to students for Data Structures and Algorithms.
- Used the C and Go programming languages.

Web Developer — May 2023 – Sep. 2023
Soft 31 — *Bucharest, Romania*

- Developed a **chatbot** for gathering client data about requested website functionality.
- Built web pages using the Angular Framework.
- **Automated** the work of a government institution.
- Collaborated via Bitbucket for version control, Slack for communication, and followed the Agile methodology for project management.

Projects

cklearn - machine learning library | *C, Makefile, Git* — Jul. 2025 – Oct. 2025

- Developed a C library for **machine learning, data processing and visualization**
- Implemented ML algorithms for K-means, K-Nearest-Neighbors, Linear Regression
- Processed and visualized csv data for plots and graphs
- Identified outliers in data with the Local Outlier Factor algorithm

CLI tool | *C, Makefile, Bash, Git* — Feb. 2025 – Jun. 2025

- Developed a CLI tool in C for listing and finding files, searching for relative paths and comparing words
- Used C libraries such as **dirent.h** and **sys/stat.h** for file manipulation
- Implemented flag, option and argument handling for a more flexible functionality
- Automated testing using Bash scripts

Research

Skiplist search complexity for any distribution

- Mathematically generalized the skiplist search complexity from geometric distributions to any distribution by using **probabilities**. Allowing numerical optimization for unique use cases.

Approximate nearest neighbor with double linked skiplists - in progress

- Proposed a novel approximate nearest neighbor algorithm leveraging doubly linked skiplists to form random data clusters, reducing the search space and achieving an average-case time complexity of **O(log n)**.

Languages

Romanian (native) • English (C2) • French (conversational)

Technical Skills

Languages: C/C++, Python, JavaScript, HTML/CSS, SQL
Developer Tools: Git, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ
Libraries: pandas, NumPy, Matplotlib, seaborn, sklearn, PyTorch, TensorFlow