HARUN YILMAZ

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RESEARCH OBJECTIVE

Enthusiastic Computer Science undergraduate with experience in compiler development and program analysis, seeking research opportunities in formal verification and systems programming. Eager to advance in program verification while exploring innovative approaches bridging theory and practical tool development.

EDUCATION

Sabancı University *2021 - Current*
BSc Computer Science and Engineering Istanbul, Turkey
- *GPA*: 3.8/4.0 (Expected Graduation: 2026)
- *Honors*: Dean's High Honor List (2021-Current)
- *Scholarships*: Outstanding Achievement Scholarship (100% tuition and dormitory fee exemption)
- *Relevant Coursework*: Programming Languages, Operating Systems, Formal Languages and Automata Theory, Data Structures and Algorithms, Distributed Systems, Database Systems, Discrete Mathematics, Introduction to Probability, Linear Algebra, Calculus

Vrije Universiteit Amsterdam *Feb - July 2024*
Exchange Program Amsterdam, Netherlands
- *Term GPA*: 9.1/10
- *Scholarships*: Erasmus+ Study Grant – European Commission
- *Relevant Coursework*: Computer Organization (10/10, outstanding performance), Computer Networks, Applied Programming for AI

Kayseri Science High School *2017 - 2021*
High School Kayseri, Turkey
- *GPA*: 96.8/100
- Ranked in the top 0.03% among 2.6 million participants in the national university entrance exam

WORK EXPERIENCE

Sabancı University *Jan 2025 - Current*
Learning Assistant for Undergraduate Operating Systems Course Istanbul, Turkey
- Mentoring over 150 students via weekly office hours and recitations, clarifying OS concepts (process scheduling, concurrency, memory management)
- Collaborating with faculty to design practice materials, quizzes, and recitation content to strengthen exam preparedness
- Authoring and proctoring quizzes, providing feedback to align student progress with course objectives

PROJECTS

Compiler Frontend with Static Analysis *2024*
Tools: C, Flex, Bison [⦿]
- Developed Flex/Bison-based compiler frontend with symbol tables and semantic checks for a small language

Concurrent Queue with Work Stealing *2024*
Tools: C, POSIX Threads, Synchronization primitives [⦿]
- Implemented a concurrent queue algorithm inspired by Michael & Scott's with work-stealing for multi-core scheduling

LC-3 Virtual Memory System *2023*
Tools:C, Assembly [⦿]
- Extended LC-3 VM with paged memory management, address translation and process control blocks

- **Scheme Meta-circular Interpreter** *2023*
  Tools: MIT/GNU Scheme [O]
  ◦ Built REPL interpreter for a subset of MIT/GNU Scheme supporting closures and environment management

- **Wearable Health Analytics** *2023*
  Tools: Python, Pandas, SQLite [O]
  ◦ Analyzed Garmin data to correlate sleep, activity, and stress metrics. Performed statistical analysis and hypothesis testing.

- **VocabVault Learning Platform** *2023*
  Tools: Django, HTML5, CSS3, JavaScript [O]
  ◦ Created Django web app with API integration for vocabulary learning. Implemented user authentication, RESTful API, and interactive learning tools.

- **Optimized Keyboard Layout for Social Media Users** *2023*
  Tools: Python
  ◦ Designed ergonomic keyboard layout through text pattern analysis

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Scheme, Verilog HDL, Prolog
- **Development Tools:** Git, LaTeX, Flex/Bison, POSIX Threads
- **Web Technologies:** HTML, CSS, JavaScript

NATURAL LANGUAGES

- **Turkish:** Native
- **English:** Advanced (Proficient in academic writing and reading, fluent in professional communication)

VOLUNTEERING AND LEADERSHIP

- **SUDOSK (Sabancı University Outdoor Sports Club)** *2023 - Current*
  President & Board Member
  ◦ Led as President and Board Member, organizing outdoor sports events and managing club administration to promote a healthy, active community

- **Civic Involvement Project (CIP), Sabancı University** *2022*
  Volunteer
  ◦ Volunteered in coastal cleanups and animal shelter work to support environmental conservation and animal welfare

- **ELELE Health Education and Charity Foundation** *2022 - 2023*
  Volunteer – Celiac Disease Support
  ◦ Assisted celiac disease support by organizing awareness campaigns, fundraising events, and distributing gluten-free food packages

HOBBIES AND INTERESTS

Rock climbing, Bouldering, Drumming, Outdoor sports (mountaineering, hiking, cycling)

REFERENCES

- **Dr. Süha Orhun Mutluergil** *Computer Science and Engineering, Sabancı University*
  Email: suha.mutluergil@sabanciuniv.edu Faculty Member
- **ir. Jesse John Robert Donkervliet** *Vrije Universiteit Amsterdam*
  Email: j.j.r.donkervliet@vu.nl Computer Science Teacher