Yusuf ATMACA

İzmir, Türkiye 33yusufatmaca@gmail.com yusufatmaca.github.io yusufatmaca97
yusufatmaca

Education

İzmir Institute of Technology *Oct 2019 – June 2025*
BSc in Computer Engineering

- **Elective Courses I took:** Heterogeneous Parallel Programming, Real-Time Systems, Parallel Programming Patterns, Deep Learning for NLP, Compiler Design and Construction, Optimization Methods

Experience

Software Engineer *İzmir 35410, TR*
ETE Technology *Aug 2025 – Present*

- Contributing to the development of simulation and modeling tools using C/C++, with an emphasis on object-oriented design and efficient data structures.
- Working on GPU-accelerated components using CUDA and parallel programming techniques to improve computational performance.
- Collaborating in a multidisciplinary team to build real-time and scalable software systems.
- Applying mathematical and algorithmic approaches in performance-critical systems relevant to simulation and gaming environments.

System Engineer Long-Term Intern *Kocaeli 41480, TR*
Yapı Kredi Technology *Feb 2025– June 2025*

- Assisted in patch management and vulnerability tracking for Windows OS.
- Documented system activities and shared them with operations teams when necessary.
- Collaborated closely with security and software teams to ensure system reliability and continuity.
- Managed and tracked internal requests through a ticket-based platform, taking action on incoming records.

Back-End Developer Intern *İzmir 35430, TR*
DELTA Smart Technologies *June 2024 – Oct 2024*

- Developed an internal company organization system using Java Spring Boot and MySQL.
- Designed and implemented RESTful APIs to manage user roles, departments, and team hierarchies.
- Followed clean code principles and contributed to scalable backend architecture.
- Collaborated in an agile environment and participated in code reviews and debugging sessions.
- Gained hands-on experience with relational database modeling, data validation, and deployment practices.

Engineer Intern *İzmir 35210, TR*
T.C. Sanayi ve Teknoloji Bakanlığı *Aug 2024 – Sep 2024*

- Completed a mandatory engineering internship as part of undergraduate program requirements.
- Gained exposure to government-led industrial operations and observed administrative workflows within a public-sector engineering context.

Projects

Bachelor's Thesis – Louvain Algorithm with OpenMP GPU Offloading *louvain-openmp-gpu*

- Implemented the Louvain community detection algorithm using OpenMP GPU offloading as part of a bachelor's thesis project.
- Closely followed the approach presented in Community Detection on GPUs: A Comparative Approach by Naim et al. to ensure methodological consistency.
- Focused on modularity optimization and vertex bucketing strategies to achieve parallel performance on

heterogeneous systems.

- Gained hands-on experience with shared-memory parallelism, graph-based algorithm design, and performance evaluation across GPU frameworks.

Parallelizing NFA Matching *C-NFA-3150*

- Contributed to an existing Non-Deterministic Finite Automata (NFA) matching project by parallelizing a previously serial implementation.
- Applied parallel programming principles to accelerate pattern matching, leveraging techniques such as data decomposition and thread-level parallelism.
- Improved overall performance and scalability while preserving the correctness of the original algorithm.
- Gained practical experience in transforming sequential code into efficient parallel executions using real-world automata theory applications.

Estimating π Using Monte Carlo Simulation with CUDA *estimate-pi-using-monte-carlo-method*

- Implemented a parallel Monte Carlo simulation to estimate the value of π using NVIDIA's CUDA programming model.
- Offloaded the random point generation and circle-hit detection to the GPU, enabling massive parallelism for high-speed computation.
- Demonstrated significant performance improvement over CPU-based implementations, highlighting CUDA's suitability for embarrassingly parallel problems.
- Developed a clear understanding of CUDA kernels, memory management (global vs. shared), and thread hierarchy (grids and blocks).
- Documented the algorithm in detail in the README file.

Certificates

- CUDA
  - Accelerating CUDA C Applications with Concurrent Streams
  - Fundamentals of Accelerated Computing with CUDA C/C
  - Scaling Workloads Across Multiple GPUs with CUDA C
- Java
  - Java Spring Boot: Professional eCommerce Project Masterclass