

ALEXIS LE GLAUNEC

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EDUCATION

Rice University | *Houston, TX*

Aug. 2021 - Jan 2026

PhD in Computer Science

GPA: 4.0/4.0

Institut Polytechnique de Paris | *Paris, France*

Jul 2021

MS in Computer Science

GPA: 4.0/4.0

WORK EXPERIENCE

Engineering Intern

San Diego, USA

Qualcomm - standards for virtual reality and network protocols

May 2024 - Aug 2024

- Developed an XR application for Avatar Animation with real-time sensors to track user movements and create a responsive 3D avatar representation on screen.
- Contributed to the new Avatar Representation Format standard proposed by 3GPP with a reference software that serves as a model to use the standard.

GPU Research Intern

Palaiseau, France

Thales - simulation tools of optical systems for aerospace

Feb 2021 - Jul 2021

- Overhauled parallelization of a ray tracer on GPU in Python by redesigning algorithms and improving data locality; reduced the running time by 20 times from 10 hours to 30 minutes.
- Proposed a multi-GPU parallelization by connecting 2 GPUs, achieving a near-perfect 197% speedup.

Security Software Intern

Reims, France

Unumkey - tools and training in cybersecurity for companies

Jun 2019 - Jul 2019

- Engineered a scalable and secure dockerized Capture The Flag platform handling 50+ containers using Flask for the frontend, Docker, and Kubernetes for the backend to train programmers on cybersecurity.
- Awarded a \$600 prize for exceeding the internship's expectations.

RELEVANT PROJECTS

Streaming Validation of JSON Documents Against Schemas | Rice University

Aug. 2024 - Aug. 2025

- Achieved a 50x memory reduction by applying a streaming approach that uses less than 1MB to validate against very large JSON documents.
- Enhanced the throughput of JSON schema validation by 1000%+ against the popular library AJV.

GPU-Accelerated Multi-Pattern Matching | Rice University

Feb. 2022 - Apr. 2024

- Implemented a massively parallel algorithm with CUDA for accelerating regex matching on the GPU.
- Accelerated regex matching by a factor of x50 over applications for protein search, malware, and spam detection.

Regex Engine Using Bit Vector Automata | Rice University

Jan 2022 - Oct 2022

- Designed a new algorithm for efficient matching of difficult regexes with x100 speedup compared to industrial tools.
- Improved regex matching throughput by 1000% with a match time below 1% for 99% of regexes by using SIMD acceleration on Intel CPUs.

SKILLS

Programming: Rust, Python, C/C++, CUDA, Java, SQL, R

Technologies: Git, Bash, Docker, AWS, gdb, TensorFlow

Skills: Unix, APIs, Multithreading, Operating Systems, Computer Architecture, Databases, JSON queries

Languages: English fluent, French native

SELECTED PUBLICATIONS

Z. Wen, A. Le Glaunec, K. Mamouras, and K. Yang. "RAP: Reconfigurable Automata Processor", **ISCA**, 2025

A. Le Glaunec, L. Kong, and K. Mamouras. "HybridSA: GPU Acceleration of Multi-pattern Regex Matching using Bit Parallelism", **OOPSLA**, 2024

A. Le Glaunec, L. Kong, and K. Mamouras. "Regex Engine Using Bit Vector Automata", **OOPSLA**, 2023