SANTIAGO KLEIN

Evanston, Illinois

☎ +1 773 800-5886 ✉ santiagoklein@u.northwestern.edu in linkedin.com/in/santiago-klein

 github.com/sankle ⓘ sankle.github.io

Education

Northwestern University   **Sep. 2024 – Present**
Ph.D. Student in Computer Science   *Evanston, Illinois*
- Advised by Prof. Fabián E. Bustamante
- Afiliated with Aqualab

Buenos Aires University, Faculty of Engineering (UBA)   **Apr. 2017 – Oct. 2023**
Computer Engineering (BS + MS in Distributed Systems combined degree)   *Buenos Aires, Argentina*
- Graduated with honor diploma.

Research Experience

AquaLab, Northwestern University   **Sep. 2024 – Present**
Research Assistant, advised by Prof. Fabián E. Bustamante   *Evanston, Illinois*
- **Submarine Cable Network Criticality:** The submarine cable network is a critical infrastructure that underpins the global Internet. However, its vulnerability to physical damage, outages, and geopolitical tensions poses significant risks, particularly in underdeveloped regions like Africa, where limited infrastructure amplifies the impact of disruptions. In this project, we are studying the impact of SCN failures in Africa.

University of Buenos Aires   **Mar. 2023 – Oct. 2023**
Thesis Project: SPLASH | https://splash.aqualab.cs.northwestern.edu   *Buenos Aires, Argetina*
- **S**ubmarine **P**latform **L**ink **A**nalysis **S**ystem **H**ub: Platform to analyze Internet quality metrics and traffic on the occurrence of different types of Internet failures, focusing on the ones that affect the Submarine Cable Network. Built an automated data ingestion pipeline and Grafana visualization dashboards to analyze the data ingested from diverse sources, including RIPE Atlas, MLab and PyPI. Ingested ping, traceroute and CHAOS measurements to Root DNS servers. Mapped RIPE traceroute measurements to AS-Level paths using bdrmapIT, and extracted server geolocation using regular expressions over CHAOS TXT records.

Publications

- Ten years of the Venezuelan crisis - An Internet perspective. *Esteban Carisimo, Rashna Kumar, Caleb J. Wang,* **Santiago Klein***, Fabian E. Bustamante. In proceedings of the ACM SIGCOMM 2024 Conference, Sydney, Australia.*

Work Experience

MuleSoft, a Salesforce Company   **Apr. 2021 – Aug. 2024**
Software Engineering MTS (previously AMTS & Intern)   *Buenos Aires, Argentina*
- Full Stack Software Engineer in MuleSoft Anypoint Platform's API Manager Team. Developing microservices that handle 1M req/s. Contributed to the control plane adaptation to manage the new Flex Gateway, and the ground-zero deployment of all team managed services in Hyperforce, an AWS-based Salesforce's abstraction.
- Technologies: JavaScript (React/Node), Java (Spring), PostgreSQL, AWS, Docker, Kubernetes, Istio, Redis, Jenkins, Spinnaker.

Teaching Experience

University of Buenos Aires   **Jul. 2021 – Jul. 2022**
Teaching Assistant   *Buenos Aires, Argentina*
- (75.41) Algorithms and Programming II Course. Topics: ADTs, algorithm's complexity, graphs. Website.
- (75.08) Operating Systems Course. Topics: Kernel, processes, scheduling, memory management, advanced concurrency, file systems. Website.

Engineering Projects

FIUBOOK | ⊘ https://github.com/sankle/fiubook_webapp   **Feb. 2023**
- University booking system that allows service offerers to publish their services (such as books, classrooms, projectors, etc.) and requestors to book those services.
- Technologies: JavaScript (React/Node), Docker, Kubernetes, GraphQL.

Seedy FIUBA | ⊘ https://seedyfiuba-g8.github.io   **Jul. 2021**
- Crowdfunding application based on the blockchain.
- Technologies: JavaScript (React/React Native/Node), Python, Solidity, Docker, Heroku, MongoDB, PostgreSQL.

Argentum Online | ⊘ https://github.com/sankle/argentum   **Jul. 2020**
- Remake of MMORPG video game for Debian based systems.
- Technologies: C++, SDL2.

Technical Skills

Languages: JavaScript, C/C++, Rust, Python, Java, Clojure, HTML/CSS, SQL
Technologies/Frameworks: React, React Native, Angular, Linux, Kafka, RabbitMQ, InfluxDB, PostgreSQL, MongoDB, Redis, Terraform, Jenkins, Spinnaker, Git, AWS, Big Query, Grafana

Languages

Spanish: Native
English: C2 (Cambridge Certificate of Proficiency in English)
French: B1 (DELF)