# Mourjo Sen

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## EXPERIENCE & PROJECTS

**GOJEK**  Lead Software Engineer
*February 2021 - Present*
- **Early stage** of building the advertisement service.
- Service-oriented architecture using **Elixir**, **PostgreSQL**, **Elasticsearch**, **Kafka**.
- **Performance improvements** in core components.

**HELPSHIFT**  Data Engineer III
*March 2020 - February 2021*
- Modernization of legacy Hadoop platform handling 1 PB of data to "Delta Architecture" using **Apache Spark**, **Delta Lake**, **Databricks**.
- **Comparison between cloud data platform providers**: Databricks, Snowflake, Amazon EMR, Cloudera Data Platform, Google Cloud Platform.
- **ETL platform** for no-code data pipeline ingesting from multiple sources into the data warehouse with transformations.
- Rearchitect legacy data pipelines that **maintain timeliness** with late arriving data.

**HELPSHIFT**  Backend Engineer III
*October 2015 - February 2020*
- Services that handle **30K requests/sec** using Clojure with **Elasticsearch**, **ScyllaDB**, **MongoDB**, **Kafka**, **Redis**.
- JVM threadpool lifecycle manager for **graceful shutdown** of services.
- Resilience components for services: **load shedding**, **circuit breaking**, **resource pooling**.
- Filtering DSL: One common language module to **plug in with multiple data sources**.
- Server-side sessions layer for HTTP services for **authentication/authorization**.
- Property-based testing using the **QuickCheck** method to automate test case generation.
- Concurrent benchmarking framework using **communicating sequential processes**.

**SPAM DETECTION IN TWITTER**  with Dr Arnaud Legout, Inria
*April 2014 - August 2015*
- Analyzing the **Twitter graph** to find a measure of "trust" based on users' activities and connections on Twitter, to detect spam behaviour.
- Followed with a 6-month internship on this topic funded by **Mircosoft Research**.

## PERSONAL PROJECTS

*July 2012 - present*
- **Bounded recursive generator** for property-based testing in Clojure. *git.io/JtA9p*.
- **Edusoc:** A web-based **social network for education**. *git.io/JtASP*.
- **Request timeout handler** for async request processing in Clojure's Ring/Jetty adapter. *git.io/JtASo*
- **CreatureSim:** Dynamic classloading in Java to simulate creatures that interact based on plugin classes at runtime. *git.io/JtASM*
- **Alienvation**: Developing a GUI game using **Java Swing** in which a player controls spaceships and fights against aliens. *git.io/JtASd*.

## ACHIEVEMENTS

- Conference talk at **re:Clojure 2020** on "Building Resilient Services in Clojure".
- **30K+** reads on technical blog posts on Medium.
- Three research publications, two of which are **IEEE publications**.
- Conference talk at **In/Clojure 2019** on **A Fair Task Execution Framework**.
- Laboratory of *Excellence* (LABEX) **scholarship** of € 12,500 awarded by Labex UCN@Sophia for Master's degree.

## EDUCATION

**UNIVERSITÉ NICE**  MS in Computer Science
*2013 - 2015, Nice, France*
- Specialization in Networking
- Grade: 15.98/20 (**80.1%**)
- Rank: **1$^{st}$**

**ST. XAVIER'S COLLEGE**
BSc in Computer Science
*2010 - 2013, Kolkata, India*
Grade: 83.6% (**Rank 4$^{th}$**)

**MOOCS**
*2017 - present*
- **Data Engineering** with Google Cloud, 2021
- Ultimate hands-on **Hadoop**: Tame your big data, 2020
- Introduction to **Functional Programming in OCaml** (Université Paris Diderot), 2019
- **Functional Programming Principles in Scala** (École Polytechnique Fédérale de Lausanne), 2017

## LINKS

- github.com/mourjo
- linkedin.com/in/mourjosen
- medium.com/@mourjo_sen
- twitter.com/mourjo_sen