

Souranil Sen

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Education

Stony Brook University

Stony Brook, NY

○ *Masters in Computer Science*, Current GPA - 3.88

2017-2018

- Courses: Analysis of Algorithms, Visualization & Data Analytics, Computer Networks, Machine Learning, Computer Vision, Theory of Database Systems, Human Factors in Computing, Network Security

Skills

- **Proficient in:** Java, Python, Node.js, JavaScript, SQL, Git, React.js/Redux, Docker, Kubernetes, PostgreSQL, AWS, Redis;
- **Familiar with:** Tensorflow, OpenCV, Scikit-learn, NumPy, C++, Clojure, MongoDB, Rspec, Elastic Search, Shell, React Native;

Relevant Work Experience

Stony Brook University

New York

○ *Graduate Assistant*

Mar 2016 – Present

- Worked on a digital Mind Map for Schizophrenia patients with Prof. Rong Zhao, which includes building clusters of meaningful memories from their digital media, reinforced by data provided by family members (Python, TensorFlow);
- Designed and implemented APIs for a multi-tenant conference app (NYSTAR) & an app made in React Native (Node.js, SQL);
- Proposed and automated the deployments at CEWIT (Docker, docker-compose, shell, Jenkins, Gitlab);
- **Achievements** - Received appreciation for driving nystar to release and automating the CI/CD pipeline;

Quintype Inc.

Bangalore, India

○ *Senior Software Engineer*

Mar 2016 – Jan 2017

- Worked on re-designing the product from a monolith to micro-services(Clojure);
- Backend development on the data team for importing RSS feeds to the publishing platform;
- Building a real-time stock data streaming service (RxJS, websockets) using the observer pattern (Node.js);
- **Achievements** - Received appreciation on effectively mitigating production issues on call and leading a team;

ThoughtWorks Inc.

Bangalore, India

○ *Software Consultant*

August 2014–June 2015

- Worked on developing backend data driven services for an enterprise application RedE (Ruby, PostgreSQL);
- Refactored the core transition code using state machines to be more modular and flexible to changes;
- Developed dashboards for live data visualizations (D3.js); Migrated & Automated deployment using AWS OpsWorks;

TCS Innovation Labs, Tata Research

Chennai, India

○ *Solutions Developer*

January 2013–August 2014

- Worked on an Enterprise Social Networking Platform team (Java, Ruby, PostgreSQL, ElasticSearch);

Selected Projects

- **Dark Patterns Detection for increased Web UI Neutrality (CSE 523/524): (Python, TensorFlow)**
Detection of Dark Patterns that are used in designs to skew user opinion / enforce bias, using Computer Vision and Deep Learning. I am working on this under the guidance of Prof. Roy Shilkrot @ Hi Lab;
- **Visual Odometry with Deep Recurrent Convolutional Neural Networks (CSE 527): (Python, TensorFlow) « [code](#) »**
Deep Learning approach for Monocular Visual Odometry using RCNN; Inspired from the paper DeepVO
- **Computer Vision (CSE 527)(Python, TensorFlow, OpenCV, C++) « [code](#) »**
Image alignment using Laplacian Blending & perspective warping; Image segmentation using SLIC super-pixels; Object detection using Kalman Filter & Optical Flow with pre-trained Viola Jones detector;
- **Network Security (CSE 508)(C, C++, Python)**
Developed plugboard proxy for secure SSH using AES in CTR mode; DNS spoof injector & detector; tcpdump clone;
- **Computer Networks (CSE 534)(Java, Python)**
Developed a program like Wireshark to compute throughput, flow & bandwidth; A DNS resolver; Implemented Bellman-Ford algorithm for routing in a custom network topology with MiniNEXT;
- **Uberstudies: A real-time student tutoring online. (Co-Founder)**
Designed & developed the platform for connecting tutors with students online for real-time tutoring via a live coding board along with audio.
- **3D Fabricated Arm-Band with workout detection(Python, scikit-learn, 3d printing, raspberry pi)**
 - 3D printed an arm band for a raspberry pi with a gyroscope connected; Machine Learning to detect quality of workouts from the band and send user feedback using an iOS app;
 - **Awards:** Most Innovate Idea Award at Hack@CEWIT2017 « [devpost link](#) »
- **Visualization (CSE 564) (Python, Scikit-learn, numpy, d3.js, deck.gl)**
Identified the top 3 reasons & correlations for accidents from the NYC Accident data; Visualized it on a 3D map using deck.gl.

Publications

- A Highly-Resilient and Scalable Broker Architecture for IoT Pub/Sub Networks (COMSNET 2018);
- Open sourced a caching library on top of the Sequelize ORM with Redis for Node.js - [redis-cache-sequelize](#)