

Shubham Saini

PHD STUDENT · COMPUTER SCIENCE (BIOINFORMATICS)

9500 Gilman Drive, Dept. 0404, La Jolla, CA 92093

☎ (+1) 425-595-8427 | ✉ shubhamsaini@ucsd.edu | 📷 shubhamsaini | 📺 shubham-saini

Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO

2017-2020 **Doctor of Philosophy in Computer Science**

Area: Human and Population Genetics

Advisor: Dr. Melissa Gymrek

2015-2017 **Master of Science in Computer Science**

Thesis: Admixture History of Andean Highlanders

Advisor: Dr. Vineet Bafna

VELLORE INSTITUTE OF TECHNOLOGY, INDIA

2010-2014 **Bachelor of Technology in Computer Science**

Thesis: E-Adivino: A Framework for Electricity Consumption Prediction

Advisor: Dr. Amarjeet Singh

Experience

University of California, San Diego

San Diego

TEACHING ASSISTANT

Sept. 2015 - June 2017

- Teaching Assistant for Biological Databases (CSE182) and Database Systems (CSE132A) courses during different academic quarters..

IIIT Delhi

Delhi, India

RESEARCH ASSOCIATE

Jan. 2014 - Aug. 2015

- Developed interactive dashboards, modeling and analysis of building energy and sensors data.
- Helped save at least 10% on electricity costs across various commercial buildings.

Robert Bosch Centre for Cyber-Physical Systems

Bangalore, India

ANDROID DEVELOPER INTERN

May 2013 - Aug. 2013

- Developed an android application for interfacing a wearable jewelry to a smart phone using Bluetooth

Projects

Reference Haplotype Panel for Genome Wide Imputation of STRs

Winter 2017

TECHNOLOGIES: BASH, PYTHON, AWS, GATK, HIPSTR

<https://git.io/vdXmz>

- Created a framework for imputing Short Tandem Repeats into existing SNP datasets
- Parallelized the GATK SNP and HipSTR STR caller on AWS EC2 cloud computing platform for fast genome-wide analysis across thousands of samples

Admixture History of Andean Highlanders

Winter 2016 - Spring 2017

TECHNOLOGIES: BASH, PYTHON, BCFTOOLS, ADMIXTURE, LAMP-LD

- Investigated the admixture history of Peruvian population in high altitude Andean region.
- Found significant differences from Lima population in terms of European and Native American ancestry, and timing of admixture.

Facial Expression Recognition using Deep Neural Networks

Spring 2016

TECHNOLOGIES: PYTHON, KERAS, OPENCV

<https://git.io/v5547>

- Implemented facial expression recognition from live camera streams.
- State of the art CNN architecture that may be used on IoT devices to enhance their security.

Publications

Stobdan, Tsering, et al. "New insights into the genetic basis of Monge's disease and adaptation to high-altitude." *Molecular Biology and Evolution* (2017): msx239.