Shubhangi Agrawal

International House, 2299 Piedmont Avenue Room #338 ,Berkeley, CA 94720 • sagrawal@berkeley.edu • (510) 896-9070

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY **BERKELEY, CA, USA**
Candidate for Masters of Engineering in Bioengineering Expected: May 2016
Graduate Coursework: Introduction to Computational Molecular and Cellular Biology, Clinical Need-Based Therapy Solutions, Engineering Leadership (Marketing, Accounting, Project Management, Finance, Data Analytics), Model-Based Design of Clinical Therapies, Advanced Structural Aspect of Biomaterials, Molecular Biomechanics

UNIVERSITY OF PENNSYLVANIA **PHILADELPHIA, PA, USA**
Bachelor of Science in Engineering in Bioengineering Graduated: May 2013
Bachelor of Arts in Economics GPA: 3.5
Relevant Coursework: Linear Systems and Signals, Molecular Biology and Microfluidics Lab, Cell Biology and Biochemistry, Biomechanics and Bioinstrumentation Lab, Medical Devices Lab, Molecular Imaging, Vertebrate Physiology

WORK EXPERIENCE

ACCENTURE **SAN FRANCISCO, CA**
Technology Consulting Sr. Analyst October 2013-August 2015
- Served as team lead and managed seven other analysts on the IT Service Management group in one of the largest projects at Accenture in West Coast (>$100 million)
- Produced reporting metrics, trend analysis, knowledge transfer and training documentation and provided suggestions or escalations points to leadership; addressed more than 20,000 ITSM tickets, comprising of highly expedited legal and media cases
- Provided information and guidance to healthcare insurance carriers to help properly design and implement interface transactions with client website (Exchange for health plan selection)
- Explained the data elements in the data feed files to the carriers so they could properly map their provider data and provide it to client for processing
- Communicated with major healthcare providers to ensure proper data flow for health plans
- Logged and managed defects in HP ALM software and executed test scripts before major production releases
- Completed training for analysis, design, test and documentation of business processes, capabilities and technologies

L'ORÉAL USA **CLARK, NJ**
Research and Innovation Intern May 2012-August 2012
- Created a new scientific procedure to evaluate product claims for the Hair Instrumental Evaluation Department
- Accurately followed SOPs (Standard Operating Procedures) to carry out experiments for product testing
- Designed experiments to validate data using surveys (market research), statistical control, and controlled experimentation
- Used statistical analysis on large data sets to validate significance of experimental results
- Addressed challenges due to a limited budget and material available for product testing and procedure development.
- Prepared and presented a final technical report and presentation to upper management and scientists.

UNIVERSITY OF PENNSYLVANIA **PHILADELPHIA, PA**
Undergraduate Research Assistant January 2011-December 2012
- Contributed to research projects to investigate the regulation and function of RNA silencing pathways of plants
- Planted and maintained plants and followed various Biology lab procedures for DNA analysis
- Worked with various chemicals and substances, some of which required specific training to handle

PROJECTS

UNIVERSITY OF CALIFORNIA, BERKELEY **BERKELEY, CA**
Capstone Project September 2015-May 2016
- Project Title: Smartphone-based colorimetric sensors for Asthma
- Objectives: Develop a colorimetric biosensor for detection of volatile organic compounds, a smartphone based sensor signal analysis, and an internet of thing (IoT) sensor network
- Role: Development of iPhone application to analyze colorimetric sensor for disease screening using breath analysis

UNIVERSITY OF CALIFORNIA, BERKELEY **BERKELEY, CA**
Computational Biology Final Project November 2015-December 2016
- Gene assembly and annotation of unknown genomes using genome annotation and assembly software
- Data analysis for species identification, system level tests (prediction of pathways)

UNIVERSITY OF PENNSYLVANIA **PHILADELPHIA, PA**
Senior Design Project September 2012-April 2013
- Complied with FDA regulations to create an product that could be implanted in cochlear implant patients
- Organized and conducted meetings with doctor at University of Pennsylvania to understand problems in surgery and hospitals
- Created a Gantt chart to track progress

- Researched and understood properties of medical-grade materials, such as silicone and plastics
- Used SolidWorks to design prototype for 3D printing and designed experiments and testing procedures to evaluate the device and establish its compliance with goals
- Addressed challenges due to a limited budget and material available for testing and procedure development.
- Prepared and presented a final technical report and presentation to professors and students at University of Pennsylvania

HOSPITAL OF UNIVERSITY OF PENNSYLVANIA **PHILADELPHIA, PA**
Cardiac Electrophysiology Preceptorship January 2013-April 2013

- Observed ablation, defibrillator implantation, and pacemaker implantation surgeries 1-2 times a week in the cardiac electrophysiology operating rooms in the hospitals
- Gained experience wearing hospital attire, such as scrubs and lead jackets, and observing operating room protocols
- Talked to surgeons and nurses in the hospital to identify issues in surgical procedures atio instrumentation
- Interacted with patients to understand the impact of the surgeries and heart conditions such as arrhythmia
- Developed a presentation highlighting engineering issues in surgical procedures and technology and conducted research to propose solutions for preventing surgical infections and improve implantable pacemaker devices
- Talked to research director at Medtronic to understand latest technological developments in cardiac rhythm diseases

UNIVERSITY OF PENNSYLVANIA **PHILADELPHIA, PA**
Linear Systems and Signals Final Project November 2011-December 2011

- Understood three main functions of a hearing aid: filtration, amplification of a sound signal, and equalization.
- Used MATLAB, specifically Simulink and the Signal Processing Blockset in Simulink.
- Designed filters to process speech signals with random white noise to simulate situations with background noise, and created an equalizer to provide different gains for different frequencies

SKILLS

COMPUTER:MATLAB & Simulink , SQL, Java, C, Python , iPhone Application Development, Photoshop, Microsoft Office
BIOENGINEERING: Arduino microcontroller, computational analysis (MATLAB) and statistical analysis for experimental data (i.e. ANOVA), microfluidic channels, amplification with PCR, breadboard electric circuits construction, biological signals (ECG/EEG) analysis
BIOLOGY: Gel electrophoresis, protein purification, quantification using a spectrophotometer, DNA extraction, and bacteria genetics such as pGLO mutagenesis, transformation of bacteria, cloning and expression in *E. coli*
FOREIGN LANGUAGES: Hindi (Native Speaker), French (Intermediate)
ATTRIBUTES

- **Problem Solving:** Takes initiative and uses independent thinking in identifying and addressing problems
- **Communication:** Active listener and articulates own ideas and goals, both verbally and in writing
- **Teamwork:** Works well in a team and as an individual
- **Planning:** Effectively manages time, priorities, and resources and establishes clear project goals and timelines
- **Enterprise:** Copes well with complexity and uncertainty

ACTIVITIES & AWARDS

ACTIVITIES

- Berkeley Hyperloop Outreach Coordinator for Finance Team (October 2015-Present)
- Mentor: Advancing Women in Engineering (Sep2010-May2013)
- International Students Mentor (Sep2010-May 2013)
- Alumni Interviewer: University of Pennsylvania (September 2013-Present)

AWARDS

- Awtar Singh Fellowship (August 2015)
- Dean's List (2012-2013)
- 1st place Winner, Society of Women Engineers National Essay Competition, University of Pennsylvania chapter (October 2011)
- Charlotte W. Newcombe Scholarship Winner (January 2012)