Ehson (Ethan) Ghandehari

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Technical Competencies:

- Statistics, design of experiments, optimization, predictive analytics, machine learning
- Software/tools: R, Python (Pandas, Numpy, Scikit, Graphlab), Matlab, Octave, Jupyter, Bash, and mySQL
- Pseudo-languages: XML, JSON
- Visualization: ggplot, Shiny, htmlwidgets, plotly, Matplotlib, Tableau
- Excellent communication and creative problem-solving skills.

Education:

Ph.D. in **Biomedical Engineering**, **University of California Davis**, Davis, CA — All but Thesis
M.S. in **Materials Engineering, San Jose State University**, San Jose, CA — Dec 2008
B.S. in **Materials Engineering, Semnan University**, Semnan — June 2005

Professional Experience:

Process and Test Engineer, Mark One Lifestyle Inc. — Nov 2014-July 2016
San Francisco, CA

- Investigated the potency, accuracy, precision, and reliability of various sensors to be utilized in two smart-cup products: Pryme® and Vessyl®
- Designed experiments for scientific sensor studies, collected data, conducted data mining, exploratory and predictive analysis, identified influential features and eliminated the sources of systematic variation
- Prepared and presented weekly technical reports for management and made recommendations
- Designed and implemented a semi-automatic data collection-cleaning-analysis pipeline, using R and Python, for efficient, controllable, and precise heat transfer studies on the products
- Collaborated with software team, developing a customized data collection tool, by defining the expected requirements and debugging (using Jira for issue and project tracking)
- Responsible for data collection and management of spectroscopic data of many liquids; storing in Git repository, and collaborating with algorithm team in developing prediction models for liquid classification
- Conducted statistical studies (hypothesis testing, confidence level, and power of testing) on signal integrity and product functionality, assuring low risk of switching to new materials (glass and paint) and made recommendations to leader team. Conclusively, the manufacturing cost was reduced by $8.5 per cup.

Technologies: R, iPython, Python, Jupyter, Matlab, Git, Jira, LaTeX

Engineering Consultant, Synergy Solutions Select — Jan 2012-May 2014
San Francisco, CA

- Fruit Juice Project: Consulted for technology transfer/deployment of fruit juice concentrate production plants in EMEA region, by studying the risk factors, consumer behavior, and predicting total cost

Technologies: Solidworks, AutoCAD, MS office, R

Engineering Consultant, Radical Sun Systems — April 2014-July 2014
Los Angeles , CA

- Consulted in Solar Satellite Project: design and fabrication of solar system with 1 dollar-per-watt capability
- Modeled satellites with different dimensions with SolidWorks, and predicted product cost by using different materials and manufacturing techniques.

Technologies: Solidworks, AutoCAD

Research Engineer, Lawrence Livermore National Laboratory Oct 2011-Feb 2013

Physical and Life Sciences Branch; Livermore, CA

- Designed/evolved a portable biosensor: flexible polymer-based electronic device, combined with an immunoassay platform for disease diagnostics in Point-of-Care (PoC) settings
- Evaluated device potential for accurate/precise measurement of CVD biomarkers in clinical settings. The final product had a 72% correlation with the traditional on-glass diagnostic method, with only 10% of the cost
- Developed Standard Curve (fluorescence signal vs. protein concentration) of many proteins, and created and optimized predictive models capable of predicting the protein concentration of patient blood
- Measured the affinity, specificity, and sensitivity of biochemical reactions by signal processing of fluorescence signals emitted by fluorescent-labeled antibodies.

Technologies: R, MS office

Process Engineer, NASA Ames Research Center Oct 2008-Aug 2010

Thermal Protection Systems and Materials Division; Moffett Field, CA

- Responsible for planning and executing experiments, as well as thermal material testing, quality control, and process optimization, generating NASA's modern heat-shield ablatives. The material was utilized in Dragon II vehicles, introduced by SpaceX in May 2014.
- Designed experiments (DoE) for product optimization, using statistical tools Minitab and JMP
- Implemented MATLAB, processed Raman spectroscopy signals, in order to monitor the effectiveness of chemical functionality recipes on different types of Carbon Nanotubes (CNTs)
- Accomplished reproducible 50% increase in tensile strength and 76% modulus improvement, without affecting the low-density and thermal properties of the baseline material, by dispersing the materials with chemically functionalized CNTs.

Technologies: Minitab, R, JMP, MS office, Matlab

Academic Research, San Jose State University Aug 2006-Dec 2008

Department of Chemical and Materials Engineering; San Jose, CA

- Responsible for the fabrication of a microfluidic MEMS device by soft lithography, using PMHS and PDMS silicone polymers, for protein bioseparation from whole blood, using Electrokinetic Flow (EF)
- Proved, through tests and data analysis, that PMHS has better UV light transmission property and chemical modifiability as compare to the traditional PDMS materials
- Introduced PMHS as a novel functional material for microfluidics applications through publications
- Developed a Reactive Ion Etching (RIE) (using statistical strategies such as DoE, ANOVA and predictive models) protocol that doubled the surface area of microchannels, promoting more efficient chemical modification and protein bioseparation.

Technologies: Minitab, MS office

Teaching Experience:

Staff Member, Math Instructor, Summit Center, Pleasanton, CA Aug 2012-Present

Part-time Faculty Member, **San Jose State University** Jan 2009-Aug 2009

AFM Analyst (Lab Instructor), San Jose State University Aug 2006-Dec 2008

Professional Development Courses Taken in the Last Two Years:

- Machine Learning Specialization, University of Washington, Coursera
- Machine Learning, Stanford University, Coursera
- Data Science Specialization, John Hopkins University, Coursera
- Python Programming Specialization, University of Michigan, Coursera
- Data Warehousing for Business Intelligence, University of Colorado System, Coursera
- Big Data Specialization, University of California San Diego, Coursera