MINMIN HOU

http://stanford.edu/~mmhou/
(650) · 796 · 9522 ⋄ mmhou@stanford.edu

EDUCATION

Stanford University *Expected Summer 2017*
Ph.D. in Electrical Engineering
Overall GPA: 3.8/4.0
Areas: Sensors, Analog Front End, Signal Processing

Stanford University *June 2014*
M.S. in Electrical Engineering

Tianjin University *June 2012*
B.Eng. in Electrical & Automation Engineering

WORK EXPERIENCE

Fitbit Inc. June - September 2016
Research Scientist Intern, Sensors & Algorithm *San Francisco, CA*

· Investigated feasibility of a new sensing technology
· Designed and prototyped analog front end (AFE) for the new sensor
· Developed and improved signal processing algorithm for a new application

Apple Inc. June - September 2015
Sensing System Intern *Cupertino, CA*

· Wrote Python programs for controlling instruments, performing tests, and processing test data
· Conducted characterization tests for sensor modules
· Conducted thermal and structural finite element analysis for new sensors

LEADERSHIP ROLES

Teaching Assistant March - June 2016
EE204 Business Management for EE & CS *Stanford, CA*

· Interviewed previous EE204 online students and identified areas for course improvement
· Prioritized new features to add to the course online learning platform
· Worked with Product Develop team of Stanford Center for Professional Development (SCPD) to develop, iterate, test and launch the new features
· Coordinated with SCPD to solve the unforeseen issues encountered by students after initial launch

Program Lead March - September 2014
Stanford XLab Mega Run *Stanford, CA*

· Made program schedule and identified risks with the program team (researchers in Stanford XLab)
· Coordinated initiatives to mitigate risks in the early stage of the program
· Coordinated 8 researchers in the design and mask layout of 10+ types of MEMS sensors (Mega Run)
· Led a 4-person team in cleanroom micro-fabrication, assigned tasks and made sure progress was made per schedule
· Solved unforeseen issues with the team, adjusted schedule and managed expectations during the course of program

SELECTED PROJECTS

PhD Research: Galllium Nitride MEMS Sensors November 2013 - Present
Adviser: D.G. Senesky

· Designed and modeled gallium nitride (GaN) MEMS for chemical and UV sensing at high temperatures
· Developed micro-fabrication process modules for GaN MEMS sensors
· Investigated the high-temperature reliability of GaN heterostructure and metallization
· Conducted electrical testing and optical characterization of fabricated devices

Analog Front End Prototyping May - June 2016
EE122B Intro Biomedical Electronics *Teachers: G. Kovacs, L. Giovangrandi*

- Conceived specs for an Arduino shield for biosignals with the project team (analog, power, wireless, firmware)
- Designed analog circuits for signal acquisition and conditioning of ECG (electrocardiogram) and ICG (impedance cardiogram)
- Prototyped and debugged the analog circuits

UX Design: Improving Interactivity in College Classes September - December 2015
CS147 Intro HCI Design *Teacher: J. Landay*

- Interviewed college students and conducted need-finding analysis
- Formed points of view and brainstormed solutions
- Created prototypes and conducted user testing

Business Strategy Recommendations to Microsoft May 2015
EE204 Business Management for EE & CS *Teacher: F. Gibbons*

- Analyzed Microsoft's various businesses (the market shares, annual growth rates, contributions to revenue, and ecosystems)
- Analyzed the global mobile & cloud computing markets and the potential growth spaces for Microsoft
- Recommended business strategies to Microsoft (top paper of the class)
- Estimated Microsoft's revenue evolution based on the strategy recommendations

TECHNICAL SKILLS

Programming	Python, R, MATLAB, C++
Sensors	Design, Modeling, Fabrication, Testing
Analog Front End	Design, Prototyping, Debugging
Signal Processing	Preprocessing, Feature Selection, Regression, Classification
Data Science	Supervised & Unsupervised Machine Learning Techniques
Finite Element Modeling	ANSYS, COMSOL
Micro-Fabrication	Photolithography, CVD, ALD, E-Beam Evaporation, Dry Etch, Wet Etch
Material Characterization	SEM, AFM, XPS, AES (Auger Electron Spectroscopy)
Circuit Design & Simulation	LTSpice, Cadence
Mask Layout	L-Edit
PCB Layout	Eagle CAD

SELECTED PUBLICATIONS

Journal Articles

- M. Hou, D. G. Senesky, "Operation of ohmic Ti/Al/Pt/Au multilayer contacts to GaN at 600C in air", *Appl. Phys. Lett.*, 105, 081905, August 2014.
- M. Hou, H. So, A.J. Suria, A.S. Yalamarthy, D.G. Senesky, "Suppression of Persistent Photoconductivity in AlGaN/GaN Ultraviolet Photodetectors Using In-Situ Heating", submitted for review.

Conference Proceedings

- M. Hou, A.J. Suria, A.S. Yalamarthy, H. So, D.G. Senesky, "2DEG-Heated AlGaN/GaN Micro-Hotplates for High-Temperature Chemical Sensing Microsystems", *in Proc. Solid-State Sensors, Actuators and Microsystems Workshop 2016*, Hilton Head SC, June 2016.
- M. Hou, C. Pan, M. Asheghi, D. G. Senesky, "Finite element thermal analysis of localized heating of AlGaN/GaN HEMT based sensors", *in Proc. IEEE ITherm Conference 2014*, Orlando FL, May 2014.