Xiuming Zhang

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Research Interests

- Computational modeling of sensory information processing (visual, auditory, etc.), learning, memory, cognition, decision making, emotion, and various other neuroscience problems;
- General computer vision and machine learning

Education

BEng (ECE), National University of Singapore, Singapore   Aug 11 - May 15

- GPA: 4.97/5.00 | Ranking: 1/282 | Lee Kuan Yew Gold Medal
- Thesis: *Computational modeling of brain disorder heterogeneity: an Alzheimer's case* (leading to [J1])
  Committee: Profs Thomas Yeo (advisor) & Shuicheng Yan (examiner)
- GRE: V 157 (74%), Q 170 (98%), AW 4.5 (80%) | TOEFL: 113 = R 30 + L 29 + S 26 + W 28

Exchange Student, University of Waterloo, ON, Canada   Jan 14 - May 14

- GPA (ECE): 95/100

Publications

[J1] Zhang X, Mormino EC, Sperling RA, Sabuncu MR, Yeo BTT (under review) *Bayesian model reveals latent atrophy factors in Alzheimer's disease with dissociable preclinical and clinical trajectories.*

[C2] Gao J, Zhang X, Liang H, Shen X (2014) *Joint encryption and compressed sensing in smart grid data transmission.* **Proc IEEE GLOBECOM**.

[C1] Zhang X, Jin Y, Tan HX, Soh WS (2014) *CIMLoc: a crowdsourcing indoor digital map construction system for localization.* **Proc IEEE ISSNIP**.

Honors & Awards

Lee Kuan Yew Gold Medal (best graduate throughout)	NUS	Jun 15
IES Gold Medal (top graduating student)	IES	Jun 15
Texas Instruments Book Prize on DSP & Systems (area top)	TI	Jun 15
Faculty Innovation & Research Awards	NUS	Apr 14 & 15
IEEE-HKN (Eta Kappa Nu) Honor Society	IEEE	Jan 14
IET Prize	IET	Jul 13
Rohde & Schwarz Competition Finale Travel Grant	R & S GmbH	Jun 13

Intermediate Level Certificate of German Language	NUS	MAY 13
Dean's List	NUS	11 - 13

RESEARCH EXPERIENCE

Research Assistant @ Visual Computing, Institute for Infocomm Research   FEB 16 - Now

Thesis Student & Research Assistant @ Clinical Imaging Research Center   AUG 14 - JAN 16
probabilistic graphical model, linear model, voxel-based morphometry, MRI Advisor: Prof Thomas Yeo
- Bayesian modeling of Alzheimer's disease heterogeneity revealed distinct cognitive decline trajectories as early as the preclinical stage [J1]

Research Student @ Broadband Communications Research Lab, uWaterloo   JAN 14 - APR 14
compressed sensing, pseudorandom sequence, smart grid   Advisor: Prof Xuemin Shen
- Implemented a compressed sensing scheme with encryption [C2]

Research Intern @ Sense & Sense-abilities, Institute for Infocomm Research   MAY 13 - Nov 13
clustering, crowdsourcing, sensor, Android   Advisor: Prof Wee-Seng Soh
- Designed and implemented an unsupervised crowdsourcing indoor map construction system that improves tracking and localization [C1]

TEACHING EXPERIENCE

Teaching Assistant @ NUS School of Computing   AUG 12 - AUG 13
- Coached over 100 undergraduates in *CS1010E Programming Methodology* over two semesters and received very positive feedback from both the lecturers and students

Workshop Instructor @ Nanyang Technological University   DEC 15
- Introduced MATLAB basics to 40 undergraduate and graduate students in a one-day workshop

COMPUTER & LANGUAGE SKILLS

Programming Language	MATLAB, C(++), Shell, Python, Android, HTML, VHDL, Assembly
Scientific Software	FSL, FreeSurfer, SPM, COMSOL Multiphysics, HFSS
Typesetting & Graphing	TEX and friends, Adobe Illustrator
Operating System	Linux, OS X, Windows
Language	English (proficient), Mandarin (mother tongue), German (elementary)