# Xiuming Zhang

🌐 [http://xiumingzhang.github.io](http://xiumingzhang.github.io)          @ xiuming6zhang@gmail.com

🏠 #B1-01, 14 Medical Drive, Singapore 117599          📞 +65 83049056

## Research Interests

- Computational modeling of vision, audition, cognition, emotion, and various 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: 95/100 (ECE courses)

## Publications

[J1]  <u>Zhang X</u>, 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, <u>Zhang X</u>, Liang H, Shen X (2014) *Joint encryption and compressed sensing in smart grid data transmission.* **Proc IEEE GLOBECOM**.

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

## Honors & Awards

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|---|---|---|
| **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 |

## Research Experience

Research Officer @ Clinical Imaging Research Center, NUS-A*STAR Jul 15 - Now
**probabilistic graphical model, linear model, fMRI** Advisor: Prof Thomas Yeo


Thesis Student @ Clinical Imaging Research Center, NUS-A*STAR Aug 14 - May 15
**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 @ Institute for Infocomm Research, A*STAR 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

## Computer & Language Skills

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|---|---|
| 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) |