Po-Hsuan (Cameron) Chen

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Education

Joint PhD Candidate, Princeton University — *Aug 2012 - Present*
Electrical Engineering and Neuroscience (Minor: Computer Science) — Princeton, NJ
Advisors: Prof. Peter Ramadge (EE) and Prof. Uri Hasson (Neuroscience)

- **General Exam Committee:** Prof. Peter Ramadge, Prof. David Blei, Prof. Paul Cuff

MA in Electrical Engineering, Princeton University — *2012 - 2014*
Advisor: Prof. Peter Ramadge — Princeton, NJ

BS in Electrical Engineering, Valedictorian, National Taiwan University — *2007 - 2011*
Taipei, Taiwan

Research Interests

computational neuroscience, machine learning, deep learning, probabilistic model, Bayesian inference

Awards and Honors

Google PhD Fellowship,	*2016*
NIPS Oral Presentation (1 of 15 out of 1838 submitted),	*2015*
NIPS Travel Award, NIPS foundation	*2015*
NIPS Travel Grant, IBM	*2014*
Studying Abroad Scholarship, Ministry of Education, Taiwan	*2013*
University Fellowship for Science and Engineering, Princeton University	*2012*
Valedictorian, Department of Electrical Engineering, National Taiwan University	*2011*
Honorary Member, Phi Tau Phi Scholastic Honor Society	*2011*
International Champion, Altera Innovate Asia FPGA Design Competition	*2010*

Peer-Reviewed Publications/Abstracts

[1] P.-H. Chen, J. Chen, Y. Yeshurun, U. Hasson, J. V. Haxby, and P. J. Ramadge. A shared response model for multi-subject fMRI data analysis. In *IEEE Transaction on Selected Topics in Signal Processing (Submitted)*.

[2] P.-H. Chen and P. J. Ramadge. A kerneled shared response model (abstract). In *10th Annual Machine Learning Conference*. NYAS, 2016.

[3] P.-H. Chen, J. Chen, Y. Yeshurun, U. Hasson, J. V. Haxby, and P. J. Ramadge. A reduced-dimension fMRI shared response model. In *Advances in Neural Information Processing Systems (NIPS)*, 2015 (**Oral Presentation**).

[4] P.-H. Chen and P. J. Ramadge. A probabilistic latent factor approach for multi-subject fMRI data modeling(abstract). In *Neuroscience Abstracts*. Society for Neuroscience, 2015.

[5] P.-H. Chen and P. J. Ramadge. Low rank Hyperalignment (abstract). In *9th Annual Machine Learning Conference*. NYAS, 2015.

[6] P.-H. Chen and P. J. Ramadge. Probabilistic Hyperalignment. In *Machine Learning and Interpretation in Neuroimaging Workshop*. NIPS, 2014 (**Oral Presentation**).

[7] P.-H. Chen, J. S. Guntupalli, J. V. Haxby, and P. J. Ramadge. Joint SVD-Hyperalignment for multi-subject fMRI data alignment. In *Machine Learning Signal Processing*. IEEE, 2014.

[8] P.-H. Chen, J. S. Guntupalli, J. V. Haxby, and P. J. Ramadge. Joint SVD as warm start for Hyperalignment (abstract). In *8th Annual Machine Learning Conference*. NYAS, 2014.

[9] T.-H. Kuo*, P.-H. Chen*, W.-C. Hung, C.-Y. Huang, C.-H. Lee, and P.-C. Yeh. Dynamic source-channel rate-distortion control under time-varying complexity constraint for wireless video transmission. In *Wireless Communications and Networking Conference (WCNC)*. IEEE, 2012 (*: co-first authors).

Talks

[1] *Alignment of Neuroimaging Data Using the Shared Response Model*, Intel Labs, Jan, 2016

[2] *A Reduced-Dimension fMRI Shared Response Model*, Palantir Machine Learning Team, 2015

[3] *Hyperalignment Methods*, Princeton-Intel Neuroscience Seminar, 2015

[4] *Hyperalignment Methods*, Center for Cognitive Neuroscience, Dartmouth College, 2015

[5] *Probabilistic Hyperalignment*, Machine Learning and Interpretation in Neuroimaging Workshop, NIPS, 2014

[6] *Probabilistic Hyperalignment*, Princeton Neuroimaging Analysis Methods Seminar, 2014

[7] *Probabilistic Hyperalignment*, Center for Cognitive Neuroscience, Dartmouth College, 2014

[8] *Multi-task Learning with Gaussian Process Latent Factor Models for Demand Forecasting*, Amazon Forecasting Team, 2014

[9] *Multi-task Learning for Demand Forecasting*, Amazon Research Intern Symposium, 2014

[10] *Joint-SVD Hyperalignment*, Princeton Neuroimaging Analysis Methods Seminar, 2013

[11] *Joint-SVD Hyperalignment*, Center for Cognitive Neuroscience, Dartmouth College, 2013

Teaching Experience

Preceptor for COS217 Introduction to Programming Systems, ***Princeton*** *Fall 2014*
- Sophomore core course in C language and systems Princeton, NJ
- Taught 2 hours of classes per week with 20+ students
- Supported students individually outside class and during off-classroom hours

Lab Instructor for EGR 194 Introduction to Engineering, ***Princeton*** *Spring 2013, Spring 2014*
- Instructed Electrical Engineering lab sessions
- Taught fundamentals of information theory, circuits, and wireless communication

Teaching Assistant for COS402 Artificial Intelligence, ***Princeton*** *Fall 2013*
- Senior level course in AI/Machine Learning
- Delivered individualized instruction to students
- Assisted in the development of problem sets/programming assignments with professor

Mentoring Experience

Jacob A. Simon, ***Princeton University*** *Spring 2014*
- CS Department/Neuroscience Certificate Senior Paper
- Topic : Probabilistic independent component analysis for functional alignment of multi-subject fMRI data

Carolyn L. Chen, ***Princeton University*** *Spring 2014*
- EE Department Junior Independent Work
- Topic : Exploratory Analysis on Raiders fMRI Data Set with Prior Temporal Information

Open-Source Contribution

Contributor, Tensorflow (https://github.com/Tensorflow/)
- Tensorflow is a Google open-source library for numerical computation

Contributor, PyMVPA (https://github.com/PyMVPA/)
- PyMVPA is a popular open-source multivariate pattern analysis toolbox primarily for fMRI data
- Contributed in implementing Shared Response Model and several bug fixes

Industry Experience

Machine Learning Software Engineer Intern, ***Palantir*** *Jun 2015 - Aug 2015*
- Developed machine learning pipeline for customer churn analysis model Palo Alto, CA
- Designed anomaly detection model for household smart meter energy usage data

Machine Learning Scientist Intern, ***Amazon*** *Jun 2014 - Aug 2014*
- Designed machine learning models for demand forecasting of all products on Amazon.com Seattle, WA
- Developed multi-task forecasting framework for joint forecasting with improved performance

Intern, ***McKinsey*** & ***Company*** *Jun 2010 - Feb 2011*
- Conducted 10+ tech product design analysis and benchmarking analysis projects Munich, Germany
- Co-established the Taipei design-to-value lab under product development practice & Taipei, Taiwan