

# Curriculum Vitae of Carlton CHU

Name: **Chia-Yuech CHU**

Other official name: **Carlton CHU**

Date of birth: 28/July/1980

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## Education

**1999-2002** *University of Auckland New Zealand.* Bachelor of Engineering 1<sup>st</sup> class honours. Faculty of Computer System Engineering (currently called Faculty of Electrical and Computer Engineering)

**2003-2004** *University of New South Walse Australia.* Master of Biomedical Engineering. Supervised by Dr. Wei Wen.

**2005-** PhD student in Wellcome Trust Centre for Neuroimaging (*Functional Imaging Laboratory*), *Institute of Neurology, University College London.*

Primary supervisor: Dr. John Ashburner,

Secondary supervisor: Prof. Karl Friston

**2009 May** PhD viva(oral) defended successfully, Thesis title: “*Pattern recognition and machine learning for magnetic resonance images with kernel methods*”

## Employment and Working Experience

**2001 December-2002 February** Full time Computer Programmer. Cancer Center in Veteran General Hospital Taipei, Taiwan.

**2002 December-2003 February** Part time Computer Programmer. Cancer Center in Veteran General Hospital Taipei, Taiwan.

**2003 December-2004 February** Full time Computer Programmer. Information and Communication Centre, National Yang Ming University Taiwan.

**2004 August- 2005 August** Part time research assistant in Neuropsychiatric Institute of Prince of Walse Hospital, Sydney, Australia.

## **Awards and Competition**

- 1998**     **Australia Math** High Distinction
- 1998**     Olympic math New Zealand preliminary competition
- 2005**     Overseas research scholarship in UK
- 2006**     5<sup>th</sup> in Pittsburgh Brain Activity Interpretation Competition (2006)
- 2007**     1<sup>st</sup> in Pittsburgh Brain Activity Interpretation Competition (2007)  
<http://www.lrdc.pitt.edu/ebc/2007/2007.html>
- 2007**     Travel Award from Organization Human Brain Mapping conference
- 2008**     Travel Award from Organization Human Brain Mapping conference

**Programming Languages:** Matlab, C/C++, Java, python, various assembly languages (x86, 68HC11, etc )

## **Conference attended**

- Human Brain Mapping Conference, Budapest. 2004
- Human Brain Mapping Conference, Toronto. 2005
- Human Brain Mapping Conference, Florence. 2006
- Human Brain Mapping Conference, Chicago. 2007
- Human Brain Mapping Conference, Melbourne. 2008
- IEEE World Congress on Computational Intelligence (WCCI 2008)
- Human Brain Mapping Conference, San Francisco. 2009

## **Presentation (including conference posters and oral session)**

- **Chia-Yueh Carlton Chu**, Wei Wen, Sachdev Perminder. Automatic Segmentation of Lateral Ventricles. Human Brain Mapping Toronto. 2005. **Poster**
- **Chia-Yueh Carlton CHU**, Janaina Mourao-Miranda, Geoffrey Tan, John Ashburner. Relevance vector regression approach for estimating video features from fMRI. Human Brain Mapping Florence. 2006. **Poster**
- Relevance vector machine and fMRI prediction Pittsburgh brain activity interpretation competition, Academia Sinica, Taiwan, September 2006. **Invited Talk**
- **Chia-Yueh Carlton Chu**, Yizhao Ni, Geoffrey Tan, John Ashburner. Kernel Methods for fMRI Pattern Prediction – applications of Relevance Vector Regression and Kernel Ridge Regression. Human Brain Mapping Chicago. 2007. **Poster and Oral**
- **Chia-Yueh Carlton Chu**, Stefan Klöppel, Cynthia Stonnington, Bogdan

Draganski, Clifford Jack<sup>3</sup>, John Ashburner, and Richard S.J. Frackowiak. Regression analysis for clinical scores of Alzheimer's Disease using multivariate machine learning method. Human Brain Mapping Chicago. 2007. **Poster and Oral**

- **Chia-Yueh Carlton CHU**, Machine Learning & Mustererkennung in Neuroimaging, ISMRM-Meeting 2008 (Magdeburg, Germany), **Invited Talk**
- **Chia-Yueh Carlton CHU**, Janainan Mourão-Miranda, John Ashburner; Multi-class classification of fMRI pattern by Relevance Vector Regression and Kernel Ridge Regression, Human Brain Mapping Melbourne. 2008. **Poster and Oral**
- **Chia-Yueh Carlton CHU**, Geoffrey Tan, John Ashburner; Improving Voxel-Based Morphometry with finer non-linear registration by DARTEL toolbox – conventional SPM Normalization vs. DARTEL Normalization. **Poster**

## **Publication**

Friston, K., **Chu, C.**, Mourao-Miranda, J., Hulme, O., Rees, G., Penny, W., Ashburner, J., 2008. Bayesian decoding of brain images. *Neuroimage* 39, 181-205.

Kloppel, S., Draganski, B., Golding, C.V., **Chu, C.**, Nagy, Z., Cook, P.A., Hicks, S.L., Kennard, C., Alexander, D.C., Parker, G.J., Tabrizi, S.J., Frackowiak, R.S., 2008a. White matter connections reflect changes in voluntary-guided saccades in pre-symptomatic Huntington's disease. *Brain* 131, 196-204.

Kloppel, S., Stonnington, C.M., **Chu, C.**, Draganski, B., Scahill, R.I., Rohrer, J.D., Fox, N.C., Jack, C.R., Jr., Ashburner, J., Frackowiak, R.S., 2008b. Automatic classification of MR scans in Alzheimer's disease. *Brain* 131, 681-689.

Stonnington, C.M., Tan, G., Kloppel, S., **Chu, C.**, Draganski, B., Jack, C.R., Jr., Chen, K., Ashburner, J., Frackowiak, R.S., 2008. Interpreting scan data acquired from multiple scanners: a study with Alzheimer's disease. *Neuroimage* 39, 1180-1185.

Yizhao Ni, **Carlton Chu**, Craig J Saunders, John Ashburner. 2008. Kernel Methods for fMRI Pattern Prediction. 2008 IEEE World Congress on Computational Intelligence.

**Carlton Chu**, Yizhao Ni, Geoffrey Tan, Craig J Saunders, John Ashburner. 2009 Kernel Regression for fMRI pattern prediction. *Neuroimage Special Section* (submitted)

Kloppel, S., Stonnington, C.M., **Chu, C.**, Draganski, B., Scahill, R.I., Rohrer, J.D., Fox, N.C., Ashburner, J., Frackowiak, R.S., 2008. A plea for confidence intervals and consideration of generalizability in diagnostic studies. *Brain*.

Kloppel, S., Stonnington, C.M., Barnes, J., Chen, F., **Chu, C.**, Good, C.D., Mader, I., Anne Mitchell, L., Patel, A.C., Roberts, C.C., Fox, N.C., Jack, C.R., Jr., Ashburner, J., Frackowiak, R.S., 2008. Accuracy of dementia diagnosis--a direct comparison between radiologists and a computerized method. *Brain*.

Kloppel, S., **Chu, C.**, Tan, G, Draganski, B., Johnson, H., Paulsen, J. S., Kienzle, W., Tabrizi, S. J., Ashburner, J., Frackowiak, R. S., 2009. Automatic detection of pre-clinical neurodegeneration: Pre-symptomatic Huntington's disease. *Neurology*

Hassabis, D., **Chu, C.**, Rees, G., Weiskopf, N., Molyneux P. D., Maguire, E., 2009. Decoding neuronal ensembles in the human hippocampus. *Current Biology*.

Costafreda SG, **Chu C**, Ashburner J, Fu CH., 2009. Prognostic and diagnostic potential of the structural neuroanatomy of depression. *PLoS One*. 4(7)