

N. Andrew Browning

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Profile

Analytical, creative, problem solver. Motivated by challenging projects where no solution is known, the development of new techniques and the production of robust solutions for real world problems.

Current

PhD Candidate, Cognitive and Neural Systems, Boston University *September 2004 - present*

Thesis: Computational model of visually-guided navigation in primates

Developed dynamical systems model of primate visual-motion brain areas, capable of determining ego-heading and segmenting objects from video inputs. Model produces accurate heading and object segmentation results, is consistent with neurophysiological and psychophysical data and, when integrated in a virtual environment, is capable of adaptive goal approach and obstacle-avoidance steering behaviors.

Other Projects:

Target Interception: Modelled mechanisms for sequential interception of multiple moving targets.

Robotic Visual Navigation & Control: Robot identified targets, avoided obstacles, navigated to target.

Classification: Implemented and benchmarked SVM, ARTMAP, back-propagation and KNN on DNA data.

Selected Publications

** denotes equal contribution/co-first author*

Browning, Grossberg & Mingolla (2008). **Visually guided navigation and steering: Motion-based object segmentation and heading estimation in primates.** *ICCNs, May 2008, Boston*

Mingolla*, Browning* & Grossberg (2008). **Neural Dynamics of Visually-Based Object Segmentation and Navigation in Complex Environments.** *VSS, May 2008, Naples*

Browning, Grossberg & Mingolla (2007). **Computing heading and optic flow in MT-MST: A neural model of primate motion processing.** *Computational Cognitive Neuroscience conf., Nov 2007, San Diego*

Browning, Grossberg & Mingolla (2007). **Heading from optic flow of natural scenes during motion processing by cortical areas MT and MST.** *Society for Neuroscience, November 2007, San Diego*

Awards / Scholarships

Outstanding Teaching Fellow Award	<i>May 2006</i>
Research Fellowship, CNS Dept, Boston University	<i>January 2006</i>
Teaching Fellowship, CNS Dept, Boston University	<i>Fall 2005</i>
Deans Fellowship, Boston University	<i>September 2004</i>

Employment History

Data Conversion Specialist, Target Software, USA *September 2003-August 2004*
Managed international data conversion for client. Consulted and developed extract-transform-load (ETL) interfaces, managed client testing. Consulted on internationalization enhancements. Trained users.

Founder, B-English.com, Australia & UK *January 2002-July 2003*
Provided English lessons via video-conferencing. Wrote business plan, obtained funding.

English Teacher, Japan & Russia *February 2000-September 2001*

Database Consultant, the UK and the Netherlands *September 1997-October 1999*
CPP Ltd, London: Developed ETL interfaces and international modules for customer database.
Unilever: DiverseyLever Global Information System, UK and Amsterdam: Automated data extraction from SAP to data warehouse and OLAP reporting systems. Consulted on, designed and implemented financial reporting and business intelligence solutions for CFO incorporating data from 90 countries.

Education History

GRE: Analytical 800, Quantitative 730, Verbal 640, Psychology 680. *June 2002*

BSc Artificial Intelligence and Psychology 2:1 joint honours *October 1994-June 1997*
The University of Birmingham, UK
Thesis 1: Auto-associative network for object recognition. *Thesis 2:* Heuristic expert system.
Courses: Genetic Algorithms, Language Processing, Machine Learning, Expert Systems, Statistics.