## Personal Details

Name: Toan Phung
Email: tphung@cs.rmit.edu.au

## Education

**2003-2004**
RMIT University & Smart Internet Cooperative Research Centre
**Doctor Of Philosophy, PhD (Specializing in Intelligent Agent Adaptation Mechanisms)**

**1999-2002**
Royal Melbourne Institute of Technology (RMIT University)
**Bachelor of Applied Science (Computer Science) (Hons)**

## Work Experience

- **CSIRO (Commonwealth Scientific & Industrial Research Organisation)**
  **Vacation Scholarship (Summer of 2002 – 2003)**
  **Project Title: Agent Negotiations in Adaptive Supply Networks**

This project was based around Intelligent Software Agents being able to negotiate as part of a flexible negotiation protocol. Complex systems require multiple points of control which ensures that failure at one point does not affect others. These points of control require access to system components that have resource constraints which in turn poses constrains on the control points. This creates an environment where negotiation under resource constraints becomes competitive.

Applying agents to this problem brings two benefits:

1. Agents can negotiate with one another to bring about a mutually beneficial solution
2. Agents themselves can be autonomous hence automating this process

The FIPA-OS Agent Development Toolkit was used for the implementation of these agents.

Tasks included:
- Research into current progress in the state of the art of agent negotiation (background research)
- Design of communication protocol that allowed flexible negotiation
- Implementation of protocol and agents in prototype system (Using a hypothetical wine company)
- Documentation of project and report write up

- **RMIT Summer Studentship (Summer of 2001 – 2002)**

RMIT Summer Studentships allow selected students to work on University based research projects. Research areas included Artificial Intelligence, Advanced Databases, Information Retrieval, Computer Graphics and Animation, Web Document Management, Human Computer Interaction, Distributed Computing etc…). Students are assigned supervisors who are RMIT research staff whose research interests match those of the student.

**Research Project Description:**

The field I chose to work in was the field of Artificial Intelligence, in particular, the area of Intelligent Software Agents. My project group included my supervisor, two other summer students and myself. We were to help design and implement a mobile 'reverse auctioning' system which allows users to be anywhere (for example walking down a shopping center) and be able to purchase products with their mobile phones or Personal Digital Assistant's (PDA's). A user would enter what they wanted to purchase (i.e. – A music CD) at a particular price and how far they were willing to travel to buy it on their mobile or PDA. This information would be relayed to an Intelligent Software Agent who would act as the Broker or Auctioneer. This Auctioneer would then contact the appropriate Vendors or Sellers of the product in question. These Vendors would also be represented as Intelligent Software Agents. If two or more vendors agreed to sell the same product, then a 'reverse auction' would take place. When this happens, the originally specified price would be reduced in order to eliminate the number of sellers until there is only one vendor left who would then sell their product to the user.
The remote interface used was the Bluetooth wireless 3G communication platform.

**Research project tasks I was assigned:**

- Background reading
- Design of communication protocols between the Intelligent Software Agents. Four separate protocols had to be designed
- Implementation of these protocols to create a prototype system and the implementation of the Broker and Vendor Agents using the JADE Intelligent Agents Development Toolkit
- Documentation of work done

The other team members were assigned the tasks of implementing the mobile aspects of the system and also to allow other parties to view auctions as they were in progress. All three sections were merged to form the complete system.

## Subjects Taught:

**2004 –** Intelligent Web Systems Tutor/Lab Assistant, RMIT University
**2003 –** Agent-Oriented Programming & Design Lab Assistant, RMIT University
**2003 –** Intelligent Web Systems Tutor/Lab Assistant, RMIT University
**2002 –** C Programming Tutor, RMIT University
**2002 –** C Programming Lab Assistant, RMIT University

## Publications:

Toan Phung, Seng Loke and James Harland. **Adding Flexibility Using Structured Goals: the Case of Itinerant Mobile Agents**(Short Paper), In *Proceedings of the 3rd International Conference on Intelligent Agent Technology(IAT 2003)*, IEEE Computer Society Press, Halifax, Canada, Oct 13-17, 2003.

## Awards Received

**2003 -** PhD Scholarship Grant from SIT-CRC(Smart Internet Technology-Cooperative Research Centre)
**2002 -** Best Extended Research Abstract, RMIT University
**2002 -** Honours Scholarship Grant from RMIT University
**1998 -** Top Achievement In Science Award VCE Year 12
**1998 -** Biology Award VCE Year 12
**1998 -** Outstanding Academic Achievement VCE Year 12

## Languages Spoken

- English - Fluent Both Written and Spoken
- Chinese (Cantonese) - Spoken only
- Vietnamese - Spoken only

## Computer Skills

### Programming Languages

- Java
- C – Including OpenGL and RPC
- C++
- JavaScript
- ASP
- MC68K Assembly Language
- HTML
- VRML
- Visual BASIC
- SQL & PL/SQL
- LISP
- CLIPS

### Software

- JACK (**J**ava **A**gent **C**ompiler and **K**ernel) Intelligent Agent Toolkit
- JADE (**J**ava **A**gent **DE**velopment Framework) Intelligent Agent Toolkit
- FIPA-OS Intelligent Agent Toolkit
- Grasshopper Mobile Agent Toolkit
- Rational Rose
- Vi (Unix)
- LaTeX
- Pico (Unix)
- Adobe Photoshop 7.0
- CVS (Concurrent and Versioning System)

### Operating Systems

- Windows 95/98/NT/2000
- Windows 3.1/3.11
- Unix – Solaris 5.8
- Linux – Red Hat 7.2 & Fedora Core 2.0

## Interests

- Artificial Intelligence
- Computer Games
- Cricket
- Music