

# TAN SIEOW YEEK

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Gender: Male  
Nationality: Malaysian  
Availability: 2 Months Notice



## Career Objective

- To work in a dynamic and positive atmosphere which promote creative and innovation R&D culture with great team that has strong passion and enthusiasm.
- To demonstrate my technical and research skills for cutting-edge computer vision system breakthrough and development.

## Area of Research Interest

Computer vision, Image Processing, Image Understanding and Analysis, Semantic Technology, High Speed Computing, Artificial Intelligent.

## Education Background

Level: Master of Computer Science, University Of Malaya, Malaysia  
Field Of Study: Image Processing & Computer Vision, Bio-Modeling Systems, Computer Graphics, High Performance Computing  
Research Topic: Dynamic Mechanic Of Fiber-Fluid Model Of Human Heart Using High Speed Computing Technique  
Graduation Date: August 2005

Level: Bachelor's Degree (Honours), University Of Malaya, Malaysia  
Grade: 1<sup>st</sup> Class (3.71 out of 4.00)  
Field Of Study: Computer Science and Information Technology, major in Artificial Intelligence  
Thesis Title: Dynamic Bandwidth Allocation implementing Neural-Fuzzy Technique Simulated in JAVA Network Simulator  
Graduation Date: March 2002

## Summary of Working Experience

8 years experiences in computer vision & image processing technologies, including machine vision inspection, biological computation simulation and visualization:

- Delivered 4 industries used products.
- Prototyped 4 in-house machine vision solutions.
- Leading a machine vision solution research to achieve fastest, highest aperture count (more than 1 million apertures, 75 micron in diameter), 100% inspection coverage, quality inspection tools for wafer bumping and solar industry stencil.
- Designed and developed 2 bio-modeling simulation and visualization during master research. Published 2 journal papers.

6 years experiences in Artificial Intelligent including Neural Network, Fuzzy logic and Genetic Algorithm (GA):

- A seasonal developer of AI components (i.e. Solving Vehicle Routing Problem using GA); code available online for students.
- Designed and developed Neural-Fuzzy algorithm for ATM network simulation during undergraduate study.
- Supervised 2 master students in Genetic Algorithm research and implementation.

2 years experience in Semantic Technology including:

- 1 conference paper submitted; 4 patent pending applications in progress.
- Developed 1 prototype named Ontology Independent Question Generator.
- Organized 2010 and 2011 Semantic Technology and Knowledge Engineering conferences.

13 years experiences in software development in-depth knowledge in Visual C#, Visual C++, C, Java & Web development technology:

- 4 years of experience in Visual C# in successfully delivered 4 industries used machine vision solution from user requirements stage implementation.
- 2 years of experience in Visual C# integration with existing framework successfully delivered 1 automation system from system design until on site production testing, adopting CMMI Level-3 process.
- 1 year development of bio-information web portal until 1<sup>st</sup> phase delivery using PHP, MySQL, AJAX technologies.
- 2 years of experience in Visual C++ for software development and testing.
- 2 years of experience in C/C++/OpenGL for biological computation system prototype research & development.
- 2 years of JAVA & Web Service experience in delivered 4 software components integrated into existing SOA designed platform, adopting CMMI Level-5 process.

5 years experiences of entrepreneurship including:

- Secured a total of RM500k government award grant
- Secured a total of 4 customers contributing a total of RM120K company revenue.
- 2 years experience in pre-sale, sale and post-sale activities.

## Working Experience

**MIMOS BERHAD** [www.mimos.my](http://www.mimos.my)

Apr 2010 - Present

### Staff Researcher

- Research and development on Intelligent Software Components for the purpose of deploying intelligent software applications for the local and global industries mostly focused on various semantic technologies.
- In depth in semantic technology knowledge such as RDF, RDFS, OWL, SWIRL, SPIN, JENA and involved in ontology building and knowledge management processes.
- Create working prototypes and demo systems to show capabilities of and practical problems addressed by semantic technologies, drive technology transfers to product groups, and help create and execute incubation projects to [MIMOS Semantic Technology Platform](#).
- Involved in developing AI related software as web service components contributing to [Intelligent Informatics Platform](#), which adopting SOA development environment.
- Research and development of Image Understanding software components, which involve various low-level image processing techniques, such as visual descriptors construction, image segmentation, features of interest extraction, color analysis and image classification, in combination with semantic technologies for high-level conceptual knowledge analysis. Domain image resources are CCTV surveillance images and health care images, such as MRI, CT and X-Ray images.
- Intellectual Property Rights (Pending Patents) :
  - A System and Method for Extracting Spatial Relationships Between Objects in an Image
  - Automatic Concept Identification For Virtual Ontology Generation
  - System and Method For Ontology-based Question Generation
  - System and Method for Semantic Query using Automatic Question Generation and Social Network Analysis

**TechEye Technology Sdn. Bhd.** [www.techeye2u.com](http://www.techeye2u.com)

Sep 2008 - Apr 2010

### R&D Software Manager

- Involved in business development activities, products development, customer requirements analysis and collection, machine hardware sourcing, technologies integration & implementation and product delivery tasks
- Involved in intensive business plans development process for securing investor fund in company startup
- Identify potential machine vision solutions and areas of research to improve revenue and business growth, especially in semi-conductor, assembly and test related industries
- Involved in pre-sale, sale and post-sale activities, which includes development of customer solution proposal by taking consideration into customer Total Cost of Ownership (TOC) and Return-of-Investment (ROI) factors, close sale process and payment collection.
- Successfully secured, managed and implemented 2 machine vision solutions to industry customers and 4 projects of entrepreneur grants awarded by government technology funding agency
- Involved in project scopes management, which considering factors of time line, resources, budget, risk, requirement changes, technology feasibilities, product delivery and support
- Lead a team of 4 software engineers and hands on to software development tasks in Microsoft Visual .NET C#, incorporate third party image processing SDK, interface with electrical & mechanical functionalities of hardware, for developing in-house machine products.
- Responsible in communication with hardware vendors for hardware design and modification, system requirements, system

- integration, testing, quality control and pricing negotiation
- Involved in in-house software and system architecture design improvement, which involved integration with automation system and various type of hardware, to achieve faster development of machine vision solution prototypes

Developed machine vision solutions and products:

- [EVerify, Electronic Machine Inspection and Verification System](#) (Project awarded entrepreneurship grant by [CRADLE](#) in 2007)
- [ASIS PCB, Advance Stencil Inspection System](#) (Project awarded by pre-seed entrepreneurship grant by [MDEC](#). Product successfully sold to Hakko Sdn. Bhd., [www.hakko.com](http://www.hakko.com) and Ocular Sdn. Bhd. [www.ocular.com.my](http://www.ocular.com.my))
- [SZIS, Mobile Super Zooming Inspection System](#). (Solution researched, tested in STATS ChipPAC Malaysia, <http://www.statschippac.com>)
- Multiple light sources and camera integrated prototype solution.
- OCR technology in bottling inspection and verification prototype solution.

Technologies researched and developed:

- [TE 8000 – Wafer Stencil Inspection System](#) (Project awarded entrepreneurship grant by [CRADLE](#) in 2008)
- [Robotic Eye In Pipe \(REIP\)](#) (Project awarded entrepreneurship grant by [CRADLE](#) in 2009)
- PC to PLC communication (Model: Omron, SYSMAC CS/CJ/CP Series) in controlling various electronic and mechanical devices, i.e. Pneumatic reject system from SMC.
- Software framework in MS. Visual C# .NET for rapid machine vision prototype and product development.

## **Adrenalin Internet Systems MSC Sdn. Bhd**

Sep 2007 - Aug 2008

Man power outsource to GENSEQ LTD. (Incorporated in Jersey)

### **Bio-informatician (Working as Senior Software Engineer)**

- Involved in software and system architecture design for implementing a solution of bio-information portal, which provides genotyping and health prediction services: [www.MyFamilyHealth.com](http://www.MyFamilyHealth.com)
- Involved in monthly intensive business development discussion with a small team including management and engineers, concentrating in topic such as business direction, strategy planning, process define and improvement, innovative new services to be developed, as company is a start-up
- Lead a team of 4 consist of software engineers and bio-informaticians in order to execute solutions development tasks, such as software development, web design, DNA genotyping and ethnicity report using Php, Flash and JavaScript technology
- Involved in Perl script development, which used in the processing of genomic data and statistical analysis
- Involved in latest web technology development methods and tools, such as: CGI Application Framework, Yahoo UI, JSON, XML, MySQL, CSS, HTML/DHTML/XHTML, AJAX, XML, Selenium automate testing tool, Template toolkit, JavaScript, Flash and etc

## **Intel MSC Sdn. Bhd.**

Jan 2006 – Aug 2007

### **Automation Software Engineer (Tech Lead)**

- Working in a team of 8 peoples and completed a cycle of design, develop and testing of an automation systems for Chip Attach Module (CAM), that meet factory customer expectation in terms of quality, performance and delivery timeline (1½ years). Detail of the project includes:
  - Involve in writing machine software application using Ms. Visual .NET C# language to communicate with machine tools, in controlling the manufacturing process and gathering equipment status data using SecGem message as transmission protocol.
  - Specific knowledge in configuring Equipment Interface Bridge (EIB) model, which include writing of SecSimPro+ script, configuring of factory recipe management system, statistical process control system, unit level traceability and etc.
- Contribute effort in writing product design, system designs, technical solutions integration and system architecture documents for various machine station controller modules.
- Involved in the preparation of other necessary documents, such as Standard Operating Procedures (SOP), installation guide, trouble shooting guide and training guide.
- Conducted demonstration and training for developed systems targeted to application owner and end user according to project plan to ensure proper and smooth of systems delivery.
- Obtained 2 Intel internal awards for innovation idea generation and proposal, title listed as:
  - Multilingual IME Key implementation in Roman Character Keyboard.
  - A de-centralized approach to control and sync up the configuration with distributed factory client application.

## University of Malaya

Nov 2004 – Oct 2005

### Research Assistant / Master Student

- Assisted supervisor in coordinating with software vendors for lab software purchasing and maintenance process.
- Responsible as coordinator between lab and organizers in getting lab projects to demonstrate in ITEX exhibition year 2004 & 2005 held at PWTC, UM 100 years exhibition held at University of Malaya and Malaysia Research and Education Network (MYREN) road show exhibition in year 2005.
- Assisted supervisor in organizing conference for “Bio-Medical Informatics: Application in Teaching, Training, Research and Development” held in Dec 2004 at Auditorium University of Malaya.
- Involved in research and development of biological computational systems by using 3D medical images (MRI images) as source of information and by incorporating biological modeling and simulation techniques.
- Experienced in porting and testing of developed biological computational system model (Human Heart Fiber-Fluid model) to SGI platform operated in IRIX6.5 OS and Onyx super computer made by MIPS with 64 microprocessors located in Multimedia Development Corporation’s (MDC) Virtual Reality Center, Cyberjaya.
- Experienced in porting and generating research results of developed biological computational system in Linux-Cluster High Performance Computing environment and grid computing system architecture.
- Software research and development experiences in for bio-modeling simulation, which includes:
  - Developed cell and tissue biological modeling simulation based on grid computing architecture by adopting Microsoft .NET framework technologies.
  - Developed human cardiac mechanics and blood flow biological simulation system and model based on fiber-fluid computational model and 3D visualization techniques.
  - Developed rule-based human heart fiber architecture reconstruction biological simulation system and model with 3D visualization capability based on C++ and Open-GL graphic technology.

## Equisys Solutions

Jan 2003 - Oct 2004

### Project Manager / Business Development Manager

- Involved in activities such as enhancing the business operations, increasing profitability and improving customer satisfaction.
- In-charged of company’s business plan and technology R&D strategies development includes of Business Plan drafting, project management, user requirements gathering, solution consultation and risk analysis.
- Coordinated with outsourced software development team which consists of 3 programmers and 1 designer to successfully deliver several projects, which are an Online Media Access System for *Film Negara Malaysia*, Apartment Community web portal system and corporate multimedia presentation development by using Flash technology.
- Developed an Online Multimedia Library & Knowledge Management System as a commercial product.
- Developed a Multi-user and network-based Logistic Dockets Management System.
- Analyzed and designed a new website for Ministry of Health department.
- Partnership with other software vendors in developing a Machine Vision Inspection System, which involve technology such as: Euresys (eVision), JAI CV-50 ½” CCIR b/w camera, Piccolo Pro2 frame grabber, LED ring light and Canon Flatbed Scanner 3000ex.
- Working as System Analyst for Johnson & Johnson Vision Care Sdn. Bhd. For carrying out tasks:
  - Performed design, integration, and modification for company in-house system to meet Sarbanes-Oxley compliance.
  - Involved in analyzed and designed of business processes, workflows, for e.g. implementing new Change Management Control to meet Sarbanes-Oxley compliance.
  - Setup, configured and administered MSSQL 7 & 2000 server for achieving tweaking correct database management system access roles in executing scheduled jobs and store procedures.
  - Setup and administered MS Visual SourceSafe system for in-house software development and implementation control.

## Thomson Multimedia

May 2002 - Dec 2002

### - Research and Development Center based in Malaysia

#### Software Engineer

- Researched, designed and implemented system applications using Microsoft Visual C++.
- Developed prototypes system related to video editing and processing for demonstration purpose.
- Developed a search and backup application for video media files using Microsoft Visual C++.
- Developed a multi-users library video indexing system for improving the speed of manual video annotation process based on server-client architecture design.
- Involved in software development and software testing for system applications deployed to [ASTRO](#), one of the worlds largest and most advanced all-digital broadcast and production center.

## **IBM Malaysia Sdn. Bhd.**

Jan 2000 - May 2000

### **Industrial Trainee**

- Involved in system enhancement and development cycle in PERKESO SIKAP System Upgrade & Small Local Office Services project. I have involved in the following tasks:
  - 1) Analysis on PERKESO current business system.
  - 2) Understand user requirement.
  - 3) Propose new business workflow for PERKESO business system.
  - 4) Illustrate proposed decentralization system flows.
  - 5) Propose solutions for decentralization of SIKAP system.
  - 6) Get user confirmation on the proposed system.
  - 7) Assist COBOL programmer in analyzing current system programs.
  - 8) Design input/output interfaces for new system.
  - 9) Perform inquiry modules coding COBOL in OS/400 platform.
  - 10) Perform unit testing on new modules.

## **Skills**

### **Professional Fields**

Machine vision application development in semi-conductor industry | Image Understanding, Image recognition, Signal and Image processing Techniques | Semantic Technology & Knowledge Management: RDF, RDFS, OWL, SKOS, SPIN, JENA, Conceptual Graph | Bio-informatics in personal genotype data processing and web services | Biological Computational System, Modeling and Simulation | Virtual reality 3D visualization using Open-GL | High performance computing (Grid Computing Architecture) | Grid programming techniques using Microsoft C# .NET framework | Genetic Algorithm | Graph Theory | Neural Network for pattern recognition and prediction | Fuzzy Logic | Asynchronous Transfer Mode network technology | Natural Language Processing

### **Technical Skills**

Strong programming skills in Microsoft .NET C# (7 years), JAVA (5 years) | Excellent knowledge in C, C++ (6 years), JAVA Swing (3 years), Visual Basic 6 (5 years), Ms. Visual C++ (2 years), JSP/Tomcat (2 years), Open-GL (2 years), Perl script (1 year), ASP (3 years) | Semantic Technology: TopBraid composer, AllegroGraph server | Knowledge in COM+, DCOM, DLL and J2EE | Knowledge in MS SQL administrator, setup and configuration | Database: MySQL and MS. SQL 2000 | Experience in VB Script, Assembly language, Visual Prolog, MATLAB, and Palm | Familiar with Window 98, 2000, XP, NT, OS400, IRIX 6.5 and Linux OS | Intermediate user to: Photoshop, MS Office, MS Project, SQL, Visio and Lotus Notes | Web technology experience in SOAP UI for web service component testing, JMeter for performance testing, JSON, APACHE server, Yahoo UI, CSS, HTML/DHTML/XHTML, CGI Application Framework, Selenium automated testing tool, JavaScript, AJAX, PHP, XML and etc.

### **Artificial Intelligent (AI) knowledge with related application samples:**

- [Genetic Algorithm \(GA\) In Solving Multi Variants Problem Implemented In Ms. NET C#](#)
- [ADALINE TDL Neural Network Simulation In C-Sharp \(C#\)](#)
- [Genetic Algorithm \(GA\) In Solving Vehicle Routing Problem](#)
- [AI 8-puzzle \(8 Puzzle\) solver](#)
- [Dynamic Bandwidth Allocation implementing Neural-Fuzzy \(Neural Network + Fuzzy Logic\) Technique simulated in JAVA Network Simulator](#)

### **Language Proficiency**

English(Speak=8, Write=8) | Chinese(Speak=10, Write=10),  
Bahasa Malaysia (Speak=8, Write=9) | Cantonese | Hokkien

### **Personal Characteristics**

Innovative | Handle pressure well | Fast learner, excellent analytical and problem solving skills | Posses pleasant interpersonal skills and self-motivated | Outgoing and enjoy meeting people | Enjoy presentation and discussion of new ideas | Able and love to teach and share with others base on discovered and new learnt knowledge

## Extra Curricular Activities

1. Demo chair for the [Artificial Intelligent Demo 2011](#) co-located with the [3rd Malaysian Joint Conference on Artificial Intelligence \(MJCAI 2011\)](#) and the [3rd Semantic Technology And Knowledge Engineering Conference \(STAKE 2011\)](#) at UNITEN Putrajaya Campus, Malaysia.
2. Sponsorship chair for the [Third Malaysian Joint Conference on Artificial Intelligence](#) and [Semantic Technology and Knowledge Engineering](#), year 2011; Review committee for [Artificial Intelligent Tutorial \(AIT\)](#) 2011; Local Organization Committee for [Artificial Intelligence Workshops \(AIW\)](#) 2011.
3. Participated in entrepreneur training program: “[Business Plan Clinic](#)” at March 2009 and “[Step up Program for Entrepreneurs](#)” at April 2009.
4. Participated in the IPTA Research & Development Expo 2005, PWTC, 30 Sep-2 Oct 2005.
5. Participated in “Closed dialogue with deputy minister of health Malaysia”, 23<sup>rd</sup> June 2005.
6. Participated in the 16<sup>th</sup> International Invention Innovation Industrial Design & Technology Exhibition 2005 (ITEX 2005), Kuala Lumpur, Malaysia, 19<sup>th</sup>-21<sup>st</sup> May 2005.
7. Participated in MSC-Technopreneur Development Seminar & Workshop, 31<sup>st</sup> May 2004.
8. Represented University Of Malaya in the ACM International Collegiate Programming Contest, Asia Region Contest held in Hong Kong in October 2000.
9. Positioned as Marketing officer, The Grand Asia Chess Challenge 4 project, 1999/2000.
10. Others: Member, Student Library Committee, 1997/1998. Member, Sixth Form Society, 1997/1998. Participated in National Physic Competition Pre-University level, 1998. Participated in Inter-School Mathematics Quiz in the State of Penang, 1996. Adviser of Physics Department, School Science Society, 1996. Vice-Chairman, School English Language Society, 1996. Chief of Education Department, School Inventor’s Club, 1995. Head of Physic Department, School Science Society, 1995. Member, School JUDO Club, 1992-1996.

## Awards

1. Gold Medal award of the IPTA Expo 2005, PWTC, 2 October 2005.
2. “Saintis Cemerlang 2005” awarded by Ministry of Higher Education, 23 August 2005.
3. ITEX Bronze Medal award of the 16th International Invention Innovation Industrial Design & Technology Exhibition 2005 (ITEX 2005), Kuala Lumpur, Malaysia, 19th-21st May 2005.
4. Gold medal award of the Invention Exhibition of New Invention, Techniques and Products 2005, Geneva, 8 April 2005.
5. Others: Certificate of merit for Chinese Chess Competition University of Malaya 1999. Certificate of merit for National Physic Competition Pre-University level 1998.

## Publication

1. N.Selvanathan, S. Y. Tan, S.Nagappan and M.Sankupellay. “The fiber-fluid model of the human heart”. Journal of Science & Technology in the Tropics, Vol 1. No. 1, Jun 2005.
2. S. Y. Tan, Selvanathan Narainasamy, Somasundaram Nagappan. “Non-Invasive Method for Patient-Specific Virtual Heart Based on Fiber-Fluid Model”. Journal of Mobile Multimedia, Vol 2, No 1, 2006.
3. S. Y. Tan, C.C. Kiu, Dickson Lukose. Automatic Question Generator Evaluating in 3rd Semantic Technology and Knowledge Engineering (STAKE 2011), UNITEN Putrajaya, Malaysia, July 18-22, 2011.
4. S. Y. Tan, C.C. Kiu, Dickson Lukose. Ontology Independent Question Generator in Demo Proceedings of the 3rd Malaysia Joint Conference on Artificial Intelligence, UNITEN Putrajaya, Malaysia, July 18-22, 2011.
5. S.Y. Tan, C. C. Kiu, Dickson Lukose. “Ontology Independent Automatic Question Generation and Assessment”. (To publish after related patent approved)

## Reference

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