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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:	1st 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:

- Secure a total of RM400k science fund from Ministry of Science and Technology Malaysia for Image Understanding research project.
- 2 conference papers submitted; 4 patent pending applications in progress.
- Developed Image Understanding laboratory system using multiple low-level visual features incorporated in ontology for objects recognition and image annotation.
- Linking Image Understanding prototype to Linked Open Data (LOD) to enrich image content and annotate images by constructing conceptual graph as knowledge representation.
- Prototyping Ontology Independent Question Generator component based on Service Oriented Architecture (SOA) for Intelligent Learning Management System (iLMS).
- Involved in 2010, 2011 and 2012 international conference for Semantic Technology and Knowledge Engineering in Malaysia.

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

- 5 years of experience in Visual C# in successfully delivered 4 industries used machine vision solution from user requirements stage until complete 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 1st 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.
- 3 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   Apr 2010 - Present
Staff Researcher
- Research and development of Semantic Image Understanding 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. Domains of image resource are natural images, CCTV surveillance images, health care images, i.e. MRI, CT and X-Ray images.
- Secure an e-Science research grant amount of RM400K, entitled: "Multi-Feature Optimization Modelling for Object Recognition in Conceptualizing Domain Independent Images", and act as project leader.
- Performs research activities of intelligent-based software components based on Service Oriented Architecture (SOA).
- Deploying intelligent software applications mostly focused on various semantic technologies to local and global industries.
- Involved in knowledge engineering process such as ontology engineering and knowledge management.
- Acquired in depth of semantic technology knowledge, i.e. RDF, RDFS, OWL, SWIRL, SPIN, JENA, Conceptual Graph (CG).
- Involved heavily in paper publication, paper writing, patent generation, patent review and patent drafting activities.
- Intellectual Property Rights (Disclosed Patents & Pending to be filed) :
  Year 2010
  o A System and Method for Extracting Spatial Relationships Between Objects in an Image
  o Automatic Concept Identification For Virtual Ontology Generation
  o System and Method For Ontology-based Question Generation
  o System and Method for Semantic Query using Automatic Question Generation and Social Network Analysis
  Year 2011
  o A System and Method for Identifying Multiple Entities in Images
  o A System and Method to Generate Conceptual-Representation for Image Understanding
  o A Method for Enriching Concepts and Relationship with Multiple Ontologies for Image Understanding
  o A System and Method for Identification of Plurality of Plant State
  o System and Method for Performing Reasoning on Linked Open Data using High Performance Computing (HPC)

TechEye Technology Sdn. Bhd.   Sep 2008 - Apr 2010
Software Research & Development Manager
- Design, prototype and experiment on various proprietary image processing algorithms to solve unique customer requirements.
- 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.
- Involved in fund raising activities and successfully secured 4 projects of entrepreneur grants awarded by government.
- Involved in project management, which considering factors of scope, time line, resources, budget, risk, requirement changes, technology feasibilities, product delivery and support
- Leaded 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 and Ocular Sdn. Bhd. www.ocular.com.my)
- SZIS, Mobile Super Zooming Inspection System. (Solution researched, tested in STATS ChipPAC Malaysia, 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.

Intel MSC Sdn. Bhd.   Jan 2006 – Aug 2008
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:
    o 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.
    o 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.
- Involved in internal factory solution improvement research activities and obtained 2 Intel internal awards, where the proposal entitled:
    o Multilingual IME Key implementation in Roman Character Keyboard.
    o A de-centralized approach to control and sync up the configuration with distributed factory client application.

University of Malaya   Jan 2003 – Oct 2005
Research Assistant / Master Student
- Involved heavily in research and development in bio-modeling simulation tasks, which include:
    o Research and developed a biological computational human heart simulation based on fiber-fluid computational model and 3D visualization techniques.
    o Research and developed a patient specific cardiac simulation model to visualize the ventricular blood flow mechanism.
    o Developed cell and tissue biological model simulation based on grid architecture by adopting Microsoft .NET framework technologies.
    o Research and developed 3D rule-based ventricular fiber architecture reconstruction techniques based on patient specific heart MRI images, together with level-set image segmentation methodology, using C++ and Open-GL graphic technology.
    o Research and developed biological computational system in Linux-Cluster High Performance Computing (HPC) environment and grid computing system architecture, by porting the system model to SGI platform operated in IRIX6.5 OS and Onyx super computer made by MIPS with 64 microprocessors.
- Involved in research grant application, entitled: "Visualization of Cardiac Dynamic using physics-based Deformable Model and Virtual Reality" and secure an amount of RM90k.
- 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.

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 world's 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 such as:
    1) Current business system analysis
    2) Understand user requirements.
    3) Propose new simplified business workflow.
    4) Illustrate proposed system flows in details.
    5) Get user confirmation and acceptance on the proposed system.
    6) Assist COBOL programmer in analyzing current system programs.
    7) Design input/output interfaces for new system.
    8) Perform inquiry modules coding COBOL in OS/400 platform.
    9) Perform unit testing on new modules.

Skills
Professional Fields
Machine vision application development in semi-conductor industry | Bio-medical image processing research in DICOM, CT Scan, PET, X-Rays and MRI images | Image Understanding, Image recognition, Signal and Image processing Techniques using OpenCV, Matlab and Open-source tools | Semantic Technology & Knowledge Management: RDF, RDFS, OWL, SKOS, SPIN, JENA, Linked Open Data (LOD), Conceptual Graph (CG) | 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 | Machine Learning | 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:
- Image Understanding (IU) Research Laboratory System
- Various Machine Vision Application Show Cases
- 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
Strong research skills | 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 (AID 2012) co-located with the PRICAI 2012, in Kuching, Sarawak, Malaysia.
2. Paper reviewer for PRICAI 2012 special session: Computational Intelligence for Vision and Image Processing.
3. 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.
4. 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.
5. Participated in entrepreneur training program: "Business Plan Clinic" at March 2009 and "Step up Program for Entrepreneurs" at April 2009.
6. Participated in the IPTA Research & Development Expo 2005, PWTC, 30 Sep-2 Oct 2005.
7. Participated in "Closed dialogue with deputy minister of health Malaysia", 23rd June 2005.
8. Participated in the 16th International Invention Innovation Industrial Design & Technology Exhibition 2005 (ITEX 2005), Kuala Lumpur, Malaysia, 19th-21st May 2005.
9. Participated in MSC-Technopreneur Development Seminar & Workshop, 31st May 2004.
10. Represented University Of Malaya in the ACM International Collegiate Programming Contest, Asia Region Contest held in Hong Kong in October 2000.
11. Positioned as Marketing officer, The Grand Asia Chess Challenge 4 project, 1999/2000.
12. 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)
6. S.Y. Tan, C.W.Bong, Dickson Lukose. "Building Detection with Loosely-Coupled Hybrid Feature Descriptors". (Drafted)

Reference

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Position / Company:	Senior Staff Researcher / MIMOS Berhad	Senior Director / MIMOS Berhad