

## Lim Boon Ping

CONTACT INFORMATION	A-15-06 Aseana Puteri Condominium, Jln. Puteri 9/1, Bandar Puteri, Puchong, Selangor, Malaysia	Cell: (60) 12 3180321 Email: boonping.lim@gmail.com
NATIONALITY	Malaysia	
CAREER OBJECTIVE	My professional goal is to work with great team that has strong passion and enthusiasm, to create great companies, products, and businesses.	
EDUCATION	<b>Multimedia University, Cyberjaya, Malaysia</b>  Master of Science in Information Technology, July 2006 <ul style="list-style-type: none"><li>Thesis Topic: Mitigation of SYN-flooding attack using high speed programmable network processor</li></ul> B.Sc (Hons) of Information Technology, November 2002 <ul style="list-style-type: none"><li>Major: Software Engineering</li><li>CGPA: 1st Class Honours (3.82 out of 4.00)</li><li>Thesis title: Developing a distributed stock exchange application using CORBA.</li></ul> <b>Disted-Stamford College Penang &amp; University Science Malaysia</b>  Diploma in Computer Science and Information Technology <ul style="list-style-type: none"><li>CGPA: 3.81 out of 4.00</li></ul>	
PROFESSIONAL EXPERIENCE	<b>Panasonic R&amp;D Center Malaysia</b>  Senior R&D Engineer, Project Manager (August 2005 – current) <ul style="list-style-type: none"><li>5++ years of R&amp;D experiences in Panasonic Corporate R&amp;D<ul style="list-style-type: none"><li>Design &amp; develop R&amp;D software prototype for next 3-5 years technology,</li><li>Participate in new project &amp; business promotion to Panasonic Corporate &amp; Domain Companies,</li><li>Drives patent activities and invention disclosures write-up,</li><li>Participate in IETF/IRTF standardization activities.</li><li>Project planning using SDLC and CMMi processes.</li></ul></li><li>Oversee a team of 5 engineers specialized in AV Communication Protocol of Advanced Technology Development Group.<ul style="list-style-type: none"><li>Manage groups of 1-3 engineers to drive patent and software development activities.</li><li>Main interface person to manage and negotiate with Japan customers on functional requirements, scope of work and project deployment schedule.</li><li>Identify functional gaps and translates business problems and requirements into technical design.</li><li>Drive the team recruitment process to ensure timely acquisition of an</li></ul></li></ul>	

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effective talent pool in both research and development activities.

- Regularly representing company to Japan for business promotion, project meetings, presentations, demonstrations and integration activities.
- Coaching, mentoring and as a leading example to subordinates.
- Consistently achieve Project Objectives and High Customer Satisfaction.

#### Technical Experiences:

- 6++ years experience with C/C++ programming for linux-based PC and embedded system development.
- In-depth knowledge in network communication (TCP/IP, UDP, RTP etc.) and network security, specified in DDoS.
- Good knowledge and experience in prototype design for distributed client-server/P2P application.
- Knowledge in embedded system (Intel IXP platform, Panasonic Uniphier platform).
- 4 US/JP patents filed to date with extensive worked on research problem identification, prior art search, patent idea generation, proposal defense and invention disclosure drafting.
- Experience in developing software on PC-based and embedded linux platform (Panasonic *Uniphier* AM33/AM34 Processor) using C/C++.
  - Dual-source multi-receivers (up to 99 receivers) [application layer multicast-based HD video streaming](#) on Panasonic HD Telepresence System.
    - Major contributions are
      - [bandwidth fair, QoS loss-handled optimized streaming path convergence](#) algorithm.
      - [Prediction tree-based network latency and bandwidth estimation](#) for predictive and non-intrusive network measurement.
      - [Kernel-based high speed packet replication](#) mechanism by hacking on linux kernel IP stack.
      - Call control middleware, integrating with Panasonic HD Telepresence System (SIP, AV QoS etc.) to support application layer multicast-based small group communication.
      - Wired/wireless multi-node AV streaming for targeted for IP camera, digital signage, mobile phone and tele-presence system
    - Product prototype available at [Panasonic Corporation News](#).
  - [Automatic network calibration and Internet-like network traffic emulation](#) for network-based product verification and testing using automated test framework (based on Starbed by Japan Advanced Institute of Science & Technology).
    - Major contributions are
      - Define Internet-like network conditions: loss, delay, jitter, bandwidth criteria & expected path construction/AV quality.
      - Design a 30 nodes testbed consists of HD Presence reference boards & network emulator (netem, dummyNet).

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- Lead and conduct functional, performance, stress test via manual, automated and semi-automated test method.
  - **On-demand MPEG2 TS-PS AV transcoding** for Blu-ray Recoder and DVD-Recorder playback compatibility on Panasonic Uniphier processor, integrated with Universal Plug-and-Play (UPnP) stack for automated AV transcoding service discovery, advertisement and control.
    - Analyzed and mapped Blu-ray metadata format to DVD IFO format.
    - Developed a prototype to demonstrate MPEG TS-PS transcoding and playback via supporting conversion of Blu-ray clip info, play list and stream metadata to DVD IFO format, using C on RedHat9.
    - Configured and cross-compiled prototype, HTTP server and UPnP framework to *Uniphier* embedded platform.
  - **Reliable AV content recovery system** with distributed AV content storage, XOR-pairing & reconstruction, integrated with UPnP for automatic corrupted data recovery in home network.
    - Designed and developed a prototype to demonstrate AV content aware XOR-ing with distributed pairing file search, parity processing and storage, and corrupted content reconstruction capabilities, leveraged on UPnP using C/C++ in Fedora Core 3.
  - **Distributed media service across CE devices, leveraging on remote AV plug-in for home network media access**, integrated with Network AV Framework for AV data encode/decode/mux/demux/transcoding/down-sampling (distributed and collaborative AV communication and processing).
    - Identified challenges of expanding existing multimedia architecture to CE-based network environment.
    - Analyzed requirement and designed in detail architecture, components model, process flow, messaging scheme and API for distributed media service discovery and control.
    - Implemented PC-based prototype to demonstrate distributed media plug-in collaboration and practical problems/solutions addressed in patented idea, leveraged on UPnP using C/C++ in Fedora Core 3.
    - UPnP, CORBA and ICE middleware exploration & porting to *Uniphier* Platform for performance benchmark.

### **Multimedia University & Intel Technology Malaysia**

Research Officer/ Intel Scholar  
(September 2002 – July 2005)

- Designed and implemented SYN-flooding denial-of-service attacks detection and defense system on Intel IXP1200/2400 network processor platform.
- Analyzed and evaluated the performance and limitations of various proposed approaches in combating DDoS, especially towards SYN-flooding.
- Designed and developed detection and defense algorithms for syn-flooding attacks.
- Implemented algorithms on Intel IXP network processor using microcode at

	<hr/> <p>data plane and C on XScale processor at control plane.</p> <ul style="list-style-type: none"> <li>• Experienced in configuring, compiling and using GCC cross compiler toolchain for embedded system development.</li> <li>• Designed and set up a testbed environment for hardware-based performance benchmarking and evaluation.</li> <li>• In-depth knowledge of TCP/IP and network security.</li> <li>• Other tasks included research of topics for network processor introductory class and assist in teaching for undergraduates Computer Network lab sessions.</li> </ul>
	<p><b>Equisys Solution</b></p> <p>Co-founder (December 2002 – July 2004)</p> <ul style="list-style-type: none"> <li>▪ Startup a company that provides web-based solutions to government and private sector.</li> <li>▪ Plan the company's business plan and technology R&amp;D strategy.</li> <li>▪ Design the technical architecture and solution for the company's products, which includes: <ul style="list-style-type: none"> <li>• Multimedia Digital Archive Online Access System</li> <li>• Online Library &amp; Knowledge Repository Management System</li> <li>• Condominium Community Portal</li> </ul> </li> <li>▪ Manage the software development team which consists of 3 programmers and 1 designer on task scheduling, resource allocation and risk management.</li> </ul>
	<p><b>IBM Malaysia</b></p> <p>Intern (May 2001 – Aug 2001)</p>
LANGUAGE PROFICIENCY	<hr/> <p>Chinese – Excellent, English – Good, Malay – Good, Japanese – Basic</p> <hr/>
AWARDS / CERTIFICATION	<hr/> <p>2009 Panasonic R&amp;D Center Malaysia Best Employee Award</p> <p>24<sup>th</sup> Annual Matsushita Symposium Best Presentation Award</p> <p>Grant recipient of Cradle Investment Programme for project entitled "Robotic Eye Inside Pipe"</p> <p>Mentor of Cradle Investment Programme by Malaysian Government (to nurture new entrepreneur) based on expertise in AV processing &amp; networking.</p> <p>Intel® Research Scholar with MYR ~100k grant awarded</p> <p>Sun Certified Java Programmer (Java 2 Platform 1.4)</p> <p>Full scholarship under PTPTN Malaysian Government Educational Fund for achieving First Class Honour Bachelor Degree</p> <p>Dean Award for all 7 semesters during Bachelor Degree</p> <p>Best Student Award for all 4 Semesters during Diploma</p> <hr/>
PUBLICATIONS	<hr/> <p><b><u>Patent</u></b></p> <ol style="list-style-type: none"> <li>1. (WO/2009/153945) COMMUNICATION CHANNEL BUILDING DEVICE AND N-TREE BUILDING METHOD</li> </ol> <hr/>

- International Application No.: PCT/JP2009/002647
2. (WO/2009/098748) TERMINAL AND N-TREE CONSTRUCTING METHOD  
International Application No.: PCT/JP2008/004017
3. Apparatus and Method for Network Latency Prediction Using Optimal Target Node Sampling
4. Apparatus and methods for Terminal Cluster Formation in Terminal Relay Type Multi-point Communication

**Internet Draft**

"ALM Middleware API", draft-lim-irtf-sam-alm-api-00.txt.

**Conference Paper (Selected List)**

Thilmee Baduge, Lim Boon Ping, Kunio Akashi, Jason Soong, Kenichi Chinen, Ettikan K.K., Eiichi Muramoto, "Functional and Performance Verification of Overlay Multicast Applications – a Product Level Approach", in proc. of IEEE Consumer Communications & Networking Conference, Jan 2010.

Khoa T.Phan, Nam Thoai, Eiichi Muramoto, Lim Boon Ping, Ettikan K.K., and Tan Pek Yew, "Treemap - The Fast Routing Convergence Method for Application Layer Multicast", in proc. of IEEE Consumer Communications & Networking Conference, Jan 2010.

Jonathan Tan Ming Yu, Lim Boon Ping, Ettikan K.K., Thilmee Baduge, Eiichi Muramoto, "Design and Implementation of Dynamic Join/Leave Application Layer Multicasting on PeaksProll", 27th Annual Panasonic Technology Symposium, Dec 2009.

Lim Boon Ping, Ettikan K.K, Lin En Shu, Truong Khoa Phan, Nam Thoai, Eiichi Muramoto and Tan Pek Yew, "Bandwidth Fair Application Layer Multicast for Multi-party Video Conference Application", in proc. of IEEE Consumer Communications & Networking Conference, Jan 2009.

**Book Chapter**

Ettikan K.K, Jonathan Tan Ming Yu, Lim Boon Ping, Thilmee Baduge, Eiichi Muramoto. (2011). Overlay Multimedia Streaming Service for Consumer Electronics Devices. In John Buford, Advances in Next Generation Services and Service Architectures. River Publishers.

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REFERENCES

**Dr. Ettikan Kandasamy Karrupiah**

General Manager, Principal Engineer of Panasonic R&D Center Malaysia

[ettikank.k@my.panasonic.com](mailto:ettikank.k@my.panasonic.com)

Relationship: Direct superior in Panasonic R&D Center Malaysia.

**Mr. Eiichi Muramoto**

Senior Staff Engineer, Visual Communication Development Office, Panasonic Corporation

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Relationship: Project Stakeholder for Application Layer Multicast R&D for Panasonic KX-VC 500 Telepresence System.