



Lye Heng Foo

-  Professional Freelancer
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* Skills

Web Design (HTML, CSS & JS)	90%
WordPress	90%
Programming (PHP, Perl, Java, C/C++ & Tcl)	90%
Design Automation	90%
Linux & Cloud Servers (GCP, AWS)	80%
Physical Design Engineering	80%
App & Software Development	75%
Hardware & Arduino Automation	66%

Languages (Written)

English

Malay Language

Languages (Spoken)

English

Malay Language

Chinese (Hokkien & Cantonese)

Industrial Experience

Professional Services / Freelance

 Jul 2017 - Current

Currently, I am doing freelance jobs (assignments and/or hourly basis) for www.freelancer.com, www.nine.is web development agency, and some local agencies.

Areas that I covered as a freelancer:

Full Stack Web Development, SEO & Website Optimization
 Cloud Services Deployment & Maintenance (Google Cloud Platform, Amazon Web Services)
 Android Mobile App, WebApp & Software Development
 Technical Coaching Provider in IT/Computing/Engineering specialties
 Academics Training Provider in IT/Computing/Engineering subjects
 Hardware Automation using Arduino/Micro-controllers

Full Stack Web Developer / Freelancer.com

 Jul 2017 - Current

Freelancer.com Profile: <https://www.freelancer.com/u/lyehengfoo>

Areas covered in the web development include:

Website Optimization
 Website Design
 Website Content Management System (CMS) (WordPress, Joomla & Caboose)
 Full Stack Web Development - to create modern and responsive websites
 Web Development Backend (PHP)
 Web Development Frontend (JavaScript, jQuery, Bootstrap, Responsive Web Technologies & HTML5/CSS)
 Search Engine Optimization (SEO) Web Analytics
 Professional Graphics Design & Video Editing

IC Design Engineer (Senior Member of Technical Staff) / Marvell Semiconductor

 Aug 2010 - Jul 2017

Job responsibilities & key accomplishments:

Physical Design Technical Lead - Block level and Full-chip level custom ASIC design for the United States of America, Japan and China clients.
 Early Process Node Adopter - Pioneered and worked through various design issues for the early process node adoption (includes new cutting edge double patterning 16nm FinFET). Enhanced new design flow and methodology for back-end physical design for this new process node.
 Physical Design Automation Tools Development - Enhanced the existing design planning flow (covering die size estimation and cost estimation), floor-planning, power planning and power estimation for a more accurate early-design planning and quotation purposes.

Design Automation Support - Developed and enhanced the ASIC design flow for front-end and back-end design methodology.

Design Automation Engineer (Member of Technical Staff) / Intel Corporation

 Mar 2000 - Aug 2010

Job responsibilities & key accomplishments:

Technical Lead for Design Automation areas to support front-end and back-end IC designers.

Design Automation through scripts/programs (Cadence SKILL, PERL, shell scripting, C++, Python).

Design Methodology Development - circuit simulation and verification methodology, power planning and power modeling methodology.

EDA Design Tools evaluation and qualification.

Supported several EDA design tools - Cadence Virtuoso, Synopsys PrimeTime, Synopsys IC Compiler, Synopsys HSpice and HSPICE for design simulation, Synopsys VCS for design verification, DRC and LVS verification tools (i.e. Synopsys IC Validator and Mentor Graphics Calibre), Apache Redhawk and Cadence LEC (formal verification tool)

Pioneered IP library management and infrastructure development (project release handshake mechanism based on Synchronicity DesignSync).

HardCopy/ASIC backend tools and flows development from scratch.

Cadence SKILL based P-CELL for custom layout drawing - In-house pioneer developer from scratch.

Cadence IC6.1 OpenAccess migration - project technical lead.

Project Management roles.

Custom Layout Design Engineer / Intel Corporation

 Apr 1998 - Mar 2000

Job responsibilities:

ASIC Physical Design (Custom Layout) layout drawing

Layout Floor-planning - Block level and Full-chip level

DRC, LVS and EM verification for the chip design

Layout Design Methodology development and continuous improvement

Manufacturing Engineer (Photo-Lithography Process)/ Seagate Technology

 1997 - 1998

Job responsibilities:

Technical support for photo-lithography process.

Yield improvement for photo-lithography process to achieve 5-Sigma quality.

Supervision for technicians and factory operators.



Teaching & Coaching Experience

Volunteer Teacher

 2014 - Current

I am currently teaching the Weekly Dhamma Class (Buddhist Studies) at Mahindarama Sunday Pali School, Mahindarama Buddhist Temple Penang, Malaysia. Some of the classes that I covered consists of children from kindergarten and primary school levels.

Corporate In-House Trainings

 1998 - 2017

Conducted many Corporate In-House Trainings as part of Design Automation Engineer & Physical Design Engineer job responsibilities. These include:

Training for tool and automation flows' new users as additional service initiative to the companies that I have worked for.

Training for the tool main users (i.e. design engineers) whenever we deployed a new tool or a new automation flow after I have completed the tool evaluation or developed a new flow or design methodology.

Coaching for new fresh engineers, acting as mentor to them. As a result from these coaching, these new engineers had received more challenging responsibilities and quicker promotion. Most notable feedback from 360-degree feedbacks that I received during these years of training and coaching, have had numerous time mentioned that *one of my strength has always been my clear, detailed and focused training/coaching capability.*

Executive Diploma for Electrical & Electronics Technology

 2009 - 2010

I taught the *Micro Processing Systems* and *Digital Signal Processors* modules which are part of the core subjects for the Executive Diploma in Electrical & Electronics Technology.

For this course, I designed all the course materials & assignments for this module based on the course syllabus proposal directly from UTM.

NOTE: This Executive Diploma Programme is a part of the initiative from University of Technology Malaysia (UTM) Kuala Lumpur to promote and enable working adults to study part-time for their career advancement.

Two-Day Course at PSDC for Electronics Higher Diploma.

 1999

I taught *Designing with MaxPlus-II* (a Two-Day Short Course) at PSDC for Electronics Higher Diploma.

For this course, I had specially tailored all the course materials to align with Higher Diploma syllabus and ensuring its relevancy to current and future industry needs.

NOTE: This course is a part of Altera/Intel Corporate Social Responsibility (CSR) to promote its free University Program and exposure to FPGA (Field Programmable gate array) to local higher education centres.



Education

University Science of Malaysia, Penang, Malaysia

 2002-2005

Master of Science (MSc) in Computer Science

Major: Computational Intelligence and Image Processing - CGPA 3.5

Modules Taken:

- Advanced Distributed Systems Concepts & Design
- Advanced Data Communication & Computer Networks
- Neural Networks & Genetic Algorithms
- Computer Security & Cryptography
- Intelligent Document Processing
- Computer Vision & Image Processing

Research Project: Colour Image Enhancement Technique (Noise Removal For Colour Images)

University of Warwick, Coventry, United Kingdom

 1994 - 1997

Bachelor of Engineering (BEng) in Computer Systems Engineering

First Class Honours Degree

Award: **Texas Instrument Prize** for the *Best Overall Graduating Student* in Computer Systems Engineering for Year 1997.

Modules Taken:

- 1st Year Modules - Engineering 1, CSE 2, Computer Systems I, Logic Design, Programming II, Design of Information Structures, Semiconductor Device Electronics & Laboratory, Engineering Laboratory, and Industrial Systems.
- 2nd Year Modules - Computer Systems II, Introduction to Software Engineering, Concurrent programming concepts, Database Systems, Real-time Systems, Signal Processing, Control and Communication, Engineering Laboratory, Engineering Systems Analysis, Electronic Design I, and Automation and Robotics.
- 3rd year Modules - VLSI System Design, VLSI Architecture and Algorithms, Digital Signal Processing, Modelling and Simulation, Control I, and Control II.

Final Year Project: Hardware Design for Lithographic Pattern Generator

MARA Science College, Kuala Lumpur, Malaysia

 1992 - 1994

GCE A-Level - 3A's (Pure Mathematics, Applied Mathematics & Physics)

St. Michael's Institution Secondary School, Ipoh, Perak. Malaysia

 1987 - 1991

SPM - 6 A1's and 2 C3's

SRP - 8 A1's



Certifications

Google Cloud Platform Fundamentals: Core Infrastructure

» *Coursera Certified - Jan 2021*

Introduction to Psychology

» *Coursera Certified - Jan 2021*

Big Data Integration and Processing

» *Coursera Certified - Dec 2020*

Big Data Modelling and Management Systems

» *Coursera Certified - Dec 2020*

Graph Analytics for Big Data

» *Coursera Certified - Dec 2020*

Introduction to Big Data

» *Coursera Certified - Dec 2020*

Machine Learning With Big Data

» *Coursera Certified - Dec 2020*

Responsive Website Coding

» *Coursera Certified - Nov 2020*

Using Python to Access Web Data

» *Coursera Certified - Nov 2020*

Data Analysis Using Python

» *Coursera Certified - Sep 2020*

Increase SEO Traffic with WordPress

» *Coursera Certified - Sep 2020*



Technical Papers

Improved Technique for Merging GDSII Files Exported from Cadence DFII Layout Database

» *Altera Technical Symposium 2009*

Parasitic Extraction Methodology of Bump Pad Routing

» *Altera Technical Symposium 2009*

Structured ASIC Macro Cell Timing Model Characterization using NanoTime

» *Synopsys SNUG 2008*

Adaptive Vector Median Filter (AVMF) and Adaptive Vector with Trimmed-Mean Filtering (AVTMF) for Colour Images

» *Robotics, Vision and Signal Processing (ROVISIP) Conference 2005*