



# SUN Yudong

孙毓栋

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## Curriculum Vitae

### / 01 Education

- 2015 - 2016

**Hwa Chong Institution (Junior College)**  
GCE A Levels

H2 4×A's // H3 Distinction  
Physics, Chemistry, Maths and German H2  
Linear Algebra [NUS] H3

Selected to pursue Physics and Maths under the Gifted and Talented Education Programme. Excelled and was awarded the Hwa Chong Diploma with Distinction upon graduation.
- 2011 - 2014

**Hwa Chong Institution (High School)**  
Integrated Programme

Academic Mean Subject Grade 1.27

Outstanding Student Award (OSA) recipient who specialised in Physics and Biology under the selective Special Science and Math Talent (SSMT) Programme. Also achieved 2<sup>nd</sup> in National Cohort for German as a 3<sup>rd</sup> Language.

### / 02 Skills and Abilities

#### Languages

<i>English</i>	<i>Chinese</i>	<i>German</i>
Native Level	Native Level	Working Proficiency
Written/Spoken	Written/Spoken	TestDaF (TDN 4/5/4/4)

#### Skills

##### Proficient

- Web Design + Full Stack Development
  - Frontend JavaScript, HTML5/CSS3
  - Backend LAMP
- \*NIX Sys Administration and Automation
  - shell scripting; server deployment
- Git Distributed Version Control System
- Python, C/C++
  - incl. data processing (gnuplot, numpy)
- Data Analysis
- Document processing with L<sup>A</sup>T<sub>E</sub>X

##### Good

- NodeJS, C#, VBA, and MATLAB
- Competitive Programming
  - incl. data structures and algorithms
- Computer Security
- Signal Processing

##### Others

- Photography, Video Editing

## / 03 Co-Curricular Activities

2011 - 2016

### **Electronic Communications and Computer Club (EC<sup>3</sup>)**

Vice Chairman 2014

Web Developer

Self taught most computer knowledge in this club. Developed skills and gained experience in Web Design Development and Competitive Programming. Exposed to basic computer security concepts. Represented the school in national competitions such as the Singapore Games Creation Competition (SGCC) and National Olympiad in Informatics (NOI).

2014 - 2016

### **Photonics Interest Group**

Founding Member

[github.com/sunjerry019/photonLauncher](https://github.com/sunjerry019/photonLauncher)

Measuring the Temporal Correlation of Light from a Mercury Discharge Lamp

2016

Carried out Photon Statistics experiments in the photonics lab. Created equipment interfacing scripts on Linux using `Python 3` with libraries such as `pyusb` and automated said scripts for repeated data acquisition and processing. Aggregated and analysed large datasets with `numpy` and `gnuplot`. Also enabled remote monitoring, experimentation and extraction of data without physical access to the lab through reverse `SSH`.

2015 - 2016

### **Science Student' Research Council**

Publicity I/C 2016

Physics Research

[ssrc.infocommsociety.com](http://ssrc.infocommsociety.com)

Led a team in the promotion of Science as the overall Media and Publicity I/C for the Council and the International Science Youth Forum (ISYF). Administered and designed both the Council and Forum Website in 2016 with `Wordpress`.

## / 04 Engagements

- 2018 - Now  
/02                      **SJPO Alumni Trainer**                      Hwa Chong Institution  
[github.com/sunjerry019/physicsOlympiadNotes](https://github.com/sunjerry019/physicsOlympiadNotes)  
Trained Secondary 3 and 4 juniors in the Singapore Junior Physics Olympiad (SJPO). Often went beyond the syllabus to prepare notes, questions and demonstrations to get them interested and excited about Physics beyond the knowledge required for the Olympiad.
- 2017 - 2019  
/02                      /02                      **Operations and Training Administrator**                      Army / NSF  
Limited in tools, created and maintained a database in Excel to manage the particulars and details of more than 1200 people, including writing periphery tools to automate the verification (e.g. NRIC) and retrieval of information from the intranet using `VBA` and formulae. Also used `C++` to modify `svg` files to produce personalised tags from said database.
- 2017 - 2017  
/01                      /02                      **Teaching Intern**                      Physics/Maths  
Queensway Secondary School (QSS)  
Taught upper secondary express students Physics and Mathematics as an intern. Created worksheets, marked tests and kickstarted the QSS Makerspace for students to explore their interests in tinkering with things.
- 2015 - 2016  
/02                      /06                      **Founding Member, Coding4Children**                      Volunteer  
Ulu Pandan Stars (UP Stars)  
Through various mini `scratch` projects, taught underprivileged primary school children coding in hopes of getting them interested in technology and learning a new and useful skill in this changing times.

## / 05 Selected Projects

### The English Tuition Corner

Full Stack

2017

[theenglishtuitioncorner.com](http://theenglishtuitioncorner.com)

Deployed a Wordpress website and email server for my teacher from a LAMP VPS. Emails were also properly authenticated with DKIM and SPF.

### SMB Redesigned

JS

2016

[github.com/sunjerry019/SMB\\_Redesigned](https://github.com/sunjerry019/SMB_Redesigned)

Greasemonkey User Script that incorporated MaterializeCSS to create a custom, better designed user interface to the school's online message board (SMB) at its original endpoints.

### photonLauncher

python/bash

2016

[github.com/sunjerry019/photonLauncher](https://github.com/sunjerry019/photonLauncher)

Created equipment interfacing scripts used on Linux with pyusb and automated said scripts for repeated data acquisition. numpy and gnuplot was used to statistically analyse collected data. Reverse SSH was utilized for remote monitoring, experimentation and extraction of data without physical access to the lab.

### Luggage Tags

C++

2018

Singapore Armed Forces

Modified svg files using C++ to automate the generation of > 1200 personalised luggage tags for an overseas exercise. Font size of names were even adjusted according to their lengths.

### svg2eqn

python

2016

[github.com/sunjerry019/svg2eqn](https://github.com/sunjerry019/svg2eqn)

Python script that converts simple svg images into parametric equations that can be plotted on a graphing calculator. Used to submit entries for a graphing calculator design competition.

### CCA Website

HTML/CSS/JS

2015

[github.com/sunjerry019/hci-cca-website](https://github.com/sunjerry019/hci-cca-website)

Volunteered to deploy an infosite to my high school server to centralise CCA information for new students.