

# MUHAMAD HARITH ARASH BIN MUHAMAD HAKIM TAN

*University Malaya Graduate  
(Theoretical & Computational Physicist)*

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## SUMMARY

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Graduated physicist with solid programming skills, fast-learning ability and decent experience from doing personal research and trading-related projects. Aspired to venture into something new and thirst for knowledge.

## HIGHLIGHTS

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- Building Model and Analytics
- R/Python Programming
- Research and Development Project
- Trading Execution and Management

## PROFESSIONAL SIDE PROJECTS

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### Simulation of Nuclear Transmutation

*Statistical predictive behavior of nuclear transmutation process.*

- Construct and develop model for the nuclear interaction of gases using C++ language and Geant4 package manager.
- Build and design code to run open source simulation software in Linux OS.
- Predict and visualize data of interaction using ROOT-Data Analysis Framework.
- Data collection and predictive pattern using Python with external scientific methods.

### Network Programming

#### *Web Developer*

- A small project that use knowledges such as HTML, CSS, ReactJS and JavaScript in developing front-end code.
- Construct and handle Server using NodeJS, and other packages to configure the web (back-end code).
- Basic handling of database with MongoDB or MySQL.

### Quant System Development

#### *Monte Carlo Simulation on Option Pricing*

- Develop the data analysis system from scratch using Python.
- Predict the probability of an option to be in-the-money or out-of-money using the analytics.
- Modelling and forecasting of the underlying stock price return using ARIMA Model.
- Implement the prediction as a basis using R-language.

## PROFESSIONAL EXPERIENCES

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### Top Glove Corporation Internship

July 2019-Sept 2019

- Trainee as Quality Assurance with the main project to create software that able to collect data more efficient and versatile.
- Develop a system that are able to collect data from each factories quality department faster and efficiently.
- Creating a tool that able to help workers handle products more accurately.

### Reserve Officer Training Unit (ROTU)

2016-2019

- Participate with ROTU for 3 years and commissioned as 2<sup>nd</sup> Lieutenant PSSTLDM at University of Technology Malaysia (UTM).
- Experience on how to manage projects or activities with other team members efficiently and fully committed with the task given.
- Able to work under extreme pressure and eager to learn something new in order to face real world problems and find the solution.
- Implementation of Honorary, Loyalty, Courage and Pride values during training.

## CO-CURRICULAR ACTIVITIES

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- Young Navy Officer in PSSTLDM (2016-Present).
- Volunteer in Sea Games Asia 2017 (2017).
- Vice-President of Fifth Cares Club at Kolej Kediaman Kelima, UM (2018).
- Leader of Protocol The Next Mr. Einstein Project at Kolej Kediaman Kesebelas (2015).

## SKILLS

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**Computer Skills:** Python, R, MQL4, Excel VBA, Bloomberg Terminal, NodeJS, JavaScript, CSS, HTML, C/C++, Linux (OS), MATLAB, MySQL, MongoDB, SOLIDWORK(CAD), Root (CERN), Geant4 (Monte Carlo) and Microsoft Office.

**Analytical Skills:** Mathematics, Statistics, Deep Research, Technical Analysis, Forecasting.

**Soft Skills:** Report writing, Speaking and Presentation.

## EDUCATION

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**BSc Physics at University of Malaya (2016–2020)**

*Major in Theoretical & Computational Physics*

CGPA: **3.76** / 4.0

**Final Year Project**

***UM Theoretical Physics Laboratory***

Project Title: Simulation of Nuclear Transmutation of Alpha Particle with Nitrogen gases using open source Geant-4 (C++ language in Linux OS).

Project Grade: A

## CONTACT REFERENCE

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