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# Palash Tyagi

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BSc. (Hons.) in Physics | Programmer | Problem Solver | Valedictorian

[palash@tyagi.me](mailto:palash@tyagi.me) | [GitHub : Magnus167](#) | [My LinkedIn](#)

## Skills

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Python | C++ | C | Object Pascal | Delphi | Javascript | MATLAB | Google Appscript | G-Code for actuators

Raspberry Pi | Arduino | OpenCV | NLTK | Linux | Google Cloud Compute | AWS | Tesseract-OCR | MongoDB | Git | Computer Vision | WordPress | Docker | SQL | CAD design | 3D printing | Data Analysis | Electronics & Circuit Design | Machine Learning | Micro-controllers | Microsoft Office | Virtual Machines

Graphic Design | 3D Design | Autodesk Fusion | Autodesk Inventor | Metal Working | Woodworking

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## Education

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SEP 2019 -- PRESENT | BSc. (Hons.) Physics | King's College London

MAR 2011 - JUN 2019 | A Levels | Kasiga School, Dehradun

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## Achievements

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2022 Successfully completed the [IBM Ponder This Challenge \(March 2022\)](#) (1 in 70 globally)

2019 Valedictorian - [Kāsiga School](#) | [SAT India Top Performer](#) | Award for Excellence in Performing Arts for Theatre

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## Employment and Projects

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Productive Fish | Project | DEC 2020 - PRESENT

Part of a software development team that built an app that uses machine learning to help users stay focused on tasks and allows team working sessions.

jarPhys | Project | APR 2021 - PRESENT

Created an application that uses natural language tools in combination with OCR to help users run natural language search on their own documents. Project Link: [magnus167.github.io/jarPhys](https://magnus167.github.io/jarPhys)

Private Tutoring | Self Employed | DEC 2019 - PRESENT

High School tutor for Sciences, Computer Science, and Design & Technology.

Studeo Ltd. | Freelance Job | APR 2021

Created an application to collect and generate Mathematics practice questions for online learning, using computer vision, character recognition, and CAS libraries.

Sparsh Garg Pvt. Ltd. | Consultant, Programmer | APR 2020 - SEPT 2020

Built software systems for the company to manage all software-related tasks (including CRM).

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## Relevant Courses

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Introduction to C++ | Microsoft

Introduction to Cyber Security | The Open University

Introduction to Linux | Linux Foundation

Learning How To Learn | UC San Diego

Creating Powerful Political Messages | TU Delft

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## Relevant College Coursework

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### Implementing a General-Purpose Finite-Difference for Electromagnetic Waves | 2021

The project focused on developing an FDTD simulator for EM waves, to be used by students and as a teaching tool. Allowing users to create their simulations using less than 7 lines of code, the simulator is implemented in Python and uses NumPy and Matplotlib.

### Experimental Physics | 2021

The course involved performing experiments and analysing the results, including error analysis and also studying instrumental error. The course helped develop skills in scientific and clear communication, as well as building strong observational skills for a large variety of given environments.

### Introduction to Numerical Modelling | 2020

Analysing real-world problems as physical and mathematical systems using numerical modelling techniques. Two systems that were modelled were The Tacoma Bridge, and a Travelling Salesman Problem.

### Introduction to Medical Physics and Clinical Engineering | 2020

The course covered topics around medical imaging, 3D manufacturing, and radiation physics. The coursework covered was designing a sustainable, 3D printable product that would help patients with physical disabilities. School Projects

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## Relevant School Projects

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### Design and Technology Club | 2011 - 2019

Worked on several prototypes, physics projects, and exhibits. Made an Energy Monitor using microcontrollers and a GUI application. Learnt about and built FFD 3D printing and Cartesian 3D printers. Was part of a student-teacher team that did a ground-up design and fabrication of a Delta 3D printer. Represented the school at the CBSE Regional Science Exhibition in 2013, 2014, & 2016; and at the CBSE National Science Exhibitions in the years 2013, 2014, & 2017.

### Conlectio | 2016 - PRESENT

Created a server that hosts educational content (lectures, documentaries, books and practice papers) on the school network. The project was highly useful for teachers, as well as students. Scaled and maintained the project for it's lifetime. The future of the project is aimed at providing low cost edu-tech devices for students, regardless of geographical or cultural boundaries.

### Traffic and Road Safety Awareness Workshops | DEC 2018

Due to a sudden spike in the car accidents involving teenagers in the Saharanpur (IN) district, took the initiative of conducting traffic and safety awareness workshops in schools with a large number of students.

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## Languages

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English | Hindi | Spanish | Nepali | Urdu