# VATSAL PIYUSH SHAH

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#### EDUCATION -

#### High School Diploma

## Raffles World Academy - Grade 1 To Grade 12 - Dubai

**International Baccalaureate:** Computer Science HL, Physics HL, Economics SL, French ab initio SL (Predicted 7s), Math AA HL, English Language and Literature SL (Predicted 6s). Predicted 43/45 IB Diploma Points. AP Chemistry: 5 **MYP** (55/56 and 7s on 7 subjects)

## – Honors/Awards -

- Won 2nd position in programming for a coding competition at Dubai International Academy
- Received Special Recognition Award for valuable contributions to the Raffles World Academy Community in Grade 11
- Won a gold medal at the World Scholar's Cup Tournament of Champions at Yale University for the Debating Category (top 200 among 2500 participants) and won a gold medal for Team Writing (top 21 amongst 830 teams)
- Honored with the Certificate of Appreciation from Emirates Environmental Group for placing top 10 in the UAE for the Paper Collection category.
- Won Best Position Paper Award at the MENA region's largest THIMUN Affiliated conference (top 10 amongst 600 participants)
- Won second place in the NASA Space Apps 2022 Regional Challenge for developing an innovative app that educates youth about space exploration pioneers.
- Awarded Certificate of Excellence for placing top 10 in the regional World Economics Cup.
- Student of the Year in Physics HL, Computer Science HL, French ab initio SL, and Economics SL in Grade 11 at Raffles World Academy.
- Received the Academic Excellence Award as the valedictorian of Raffles World Academy in Grade 10 ( achieved highest score of 55 out of 56 points in the MYP eAssessments)

## – Experience –

Founder, 08/2020 – Current Fitness Freak – Dubai, United Arab Emirates

**Developed** a health platform that offers comprehensive guidance on adopting a healthier lifestyle. The platform includes informative interviews with medical professionals, nutritionists, and experts in the field of health. It also provides personalized diet plans to cater to individual needs and preferences.

#### Founder, 10/2021 – Current

VR Realm – Dubai, United Arab Emirates

- Spearheaded a team of four individuals to curate captivating and informative lessons targeting students in grades 6-8. Our goal was to empower these students with essential knowledge about artificial intelligence, programming skills, and 3D designing, equipping them with a promising future.
- Organized an annual STEM Fair that garnered participation from more than 100 students and attracted an audience of 200 attendees.

## Founder, 10/2021 – Current

## Skill Spark – Dubai, United Arab Emirates

- Founded a company promoting student engagement through impactful live events and skill-building opportunities.
- Hosted a UAE business conference with top CEOs discussing Dubai's economy, AI's role, and market dynamics; theme: Resilience for a Better Future.

Link to Event Highlights: https://youtu.be/OwK9nQV35no

- Organized a STEM Fair on the AI Revolution, inspiring students to create robots that reflect AI's transformative impact.
- Curated and hosted a TEDx event at Raffles World Academy on "The Gift That Cannot Be Seen"; developed marketing strategies, pitched to sponsors, and crafted the event script; also presented my weight loss journey and introduced my health platform.

## **Researcher**, 06/2023 – 07/2023

## Wolfram Summer School for Undergraduate Students – Waltham, MA, United States

- Conducted research on utilizing LLMs (Language Models) in conjunction with financial news to forecast stock prices. The objective of the project was to develop a robust machine-learning model using the Wolfram Language that could predict stock prices based on input news headlines and historical stock price data.
- The Wolfram Summer School program is tailored for undergraduate students and above. Despite being the only high school student, I had the privilege of being the sole representative from my level in this prestigious program.
- Engaged in one-on-one discussions about my project with Dr. Stephen Wolfram himself, as well as attended lectures delivered by Dr. Wolfram and other researchers at Wolfram Research.

## **Researcher**, 06/2023 – 07/2023

## $\label{eq:constraint} \textbf{Inspirit AI Summer Program} - California \ , \ United \ States$

- Worked under the mentorship of esteemed alumni from Stanford and MIT. The focus of my internship was on developing techniques for detecting fake news. I extensively utilized large language models and conducted thorough research to create reports that delved into the ethical implications surrounding their usage.
- Created an application using Python on Google Colab. This application leveraged the power of machine learning algorithms to identify and flag potentially false information, aiding in the battle against misinformation.
- Gained valuable insights into the complexities of fake news detection and the responsible application of advanced language models.

# Marketing And Promotions Assistant, 05/2022 – 06/2022

# Internship at Apparel Group – Dubai, United Arab Emirates

- Contributed to the marketing plans for both the Havaianas brand and Aldo. This involved creating engaging captions and leveraging AI systems to predict optimal times for auto-publishing posts, with the goal of maximizing website traffic and increasing brand awareness.
- Acquired knowledge about the product selection process and collaborated with the merchandisers in managing the database.

# **Software Intern**, 07/2022 – 07/2023

# Internship at Geoomnii – Dubai, United Arab Emirates

- Developed a digitalization platform for the company, specifically by creating a mobile application called Geoomnii. This application effectively showcased the company's diverse range of products, providing potential suppliers with a user-friendly interface.
- Played a key role in the implementation of an Enterprise Resource Planning (ERP) system within the company to ensure a smooth and successful integration.

• Proficiently managed the company's database system by utilizing MySQL and worked extensively with Excel files through creating line sheets and organizing data to optimize workflow and productivity.

### - Research -

- Developed a machine learning algorithm for '**Forecasting stock prices using LLMs with financial news**' with Dr. Daniel George, X AI Research Scientist during the Wolfram Summer School.
- Researched ' **Object Detection in Varied Complexity Scenarios: Insights and Implications**' under the mentorship of Dr. Joe Isaacs, Department of Computer Science and Technology, University of Cambridge.

#### PROJECTS

• Breakthrough Junior Challenge: June 2023 - Created a 2-minute video titled "Unlocking Quantum Mysteries"

Link to my video: https://youtu.be/Jnw\_Cth9iIk

- **TEDx Speaker and Organizer:** Delivered TED Talk titled "The Gift Within You" emphasizing individual power, introduced fitness platform to a broader audience, and announced health book release.
- **Business Conference Organizer:** Organized a Resilience Conference post-COVID in Dubai, facilitating interactions between renowned CEOs/Directors and school/university students, providing invaluable guidance for their future paths.
- **STEM Fair Organizer:** Directed 'Techtopia: An AI Revolution', a STEM Fair for Grade 6 students, orchestrating a robotics competition to inspire engagement and innovation in young minds.

## ADDITIONAL COURSES

Harvard CS50P: 'CS50's Introduction to Programming with Python' edX course, CS1331xIII: 'Introduction to Object-Oriented Programming with Java III: Exceptions, Data Structures, Recursion, and GUIs' edX course, Stanford: 'Supervised Machine Learning: Regression and Classification' Coursera course, U Penn: 'Microeconomics: The Power of Markets' Coursera course, LINALGxIII: Linear Algebra III: Determinants and Eigenvalues edX course, 'Deep Learning with PyTorch - Image Segmentation' Coursera course

## VOLUNTEERING -

- Actively participated in three Emirates Environmental Group Annual Conferences and collected 3700 kg of cardboard waste, earning a spot in the top 10 individuals for waste collection in the 2022 cycle in the UAE.
- Mentored students at the Dubai STEM Olympiad Competition.
- **Joined** a Mombasa expedition, helping to build the community, repaint schools, and donate essential supplies.
- **Taught** my peers and juniors subjects such as IB Physics HL, IB Mathematics AA HL, and IB Computer Science HL.
- Assisted my school in organizing various Parent-Teacher Meetings, cultural events like International Day, and all-school assemblies.

#### – Skills –

• PHP, SQL, Python, Java & JavaScript, Wolfram Language, HTML, CSS, OOP, LaTeX, Android Studio, Google Colab, AI and ML Libraries - TensorFlow, PyTorch, OpenCV, and Matplotlib.