

# Hayden Tibbals

Crowborough, East Sussex, UK

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## Personal Profile

Recent MPhys graduate with first-class honours from The University of Manchester, specialising in quantitative analysis and data-driven problem-solving. My academic and professional experiences include building machine learning models, optimizing treatment plans with NHS Christie Hospital, and creating predictive tools for sports and financial data. Proficient in Python, SQL, and advanced data analytics, I excel in leveraging data to generate actionable insights. I bring strong teamwork, communication, and leadership skills honed through collaborative projects and competitive sports.

## Education

### The University of Manchester

MPhys (Hons) Masters of Physics with Study Abroad

Manchester, UK

Sep 2020 - Jul 2024

- Achieved a first-class honors (Overall grade in top 5% in year 3)
- Specialized in machine learning, data analysis, and programming.
- Thesis: Reinforcement learning-based AI for cancer treatment optimization (graded 79%, top 10%).
- Peer mentor for first-year undergraduates and volunteer for Physics Outreach programs.

### Stony Brook University, New York

MPhys (Exchange year)

Stony Brook, New York

Aug 2022 - May 2023

- GPA: 3.8, focused on data analysis and communication through laboratory work.

## Relevant Experience

### Broadhaven Ventures

Applied AI Research Intern

Miami, Florida

Jul 2023 - Sept 2023

- Collaborated closely with the principal to automate data gathering for strategic briefings, saving over 30 minutes per task.
- Developed AI-driven tools using Python and Generative AI frameworks.
- Skills:** Data Analysis, Python, Prompt Engineering, React, API integration.

### Morrisons Supermarkets

Customer Service Assistant

Crowborough / Manchester, UK

Apr 2019 - Aug 2022

- Managed customer interactions while balancing part-time work with academic responsibilities.
- Developed teamwork, communication, and organisational skills.

## Projects

### Cancer Treatment Plan Optimisation

NHS Christie Hospital (University Project)

Manchester, UK

Oct 2023 - Jun 2024

- Analysed large-scale patient datasets develop an AI model for optimising cancer treatment plans using reinforcement learning.
- Preprocessed and refined large-scale patient datasets, to simulate treatment and optimise dose planning.
- Trained and fine-tuned reinforcement learning models to create mock plans by deciding optimal dose placement.

### Machine Learning and AI-Driven Applications

Independent Projects (All available on my website)

Crowborough, UK

Jul 2020 - Present

- Reinforcement Learning AI Trading bot:** Developed an rl agent capable of trading stocks using financial engineering inputs.
- Premier League Match Predictor:** Created an machine learning model and web interface to display premier league match predictions and results, with a 70% accuracy
- AI Negotiation Web App:** Programmed an operational full stack negotiation assistant web app with returning users using React.
- Consultancy Software Project:** Consulted with a small business to develop a bespoke AI-assisted CRM tool.

## Skills

### Programming

**Languages:** Python, SQL Queries, basic(C++, React, TypeScript), **Libraries:** Pandas, Sklearn, Pydicom, OpenAI.

### Miscellaneous

Linux,  $\text{\LaTeX}$ (Overleaf), Microsoft Office.

### Soft Skills

Time Management, Teamwork, Problem-solving, Documentation, Presentations.

## Interests

### Rugby

Representing The Stony Brook University D1 Rugby team, including an international 7s tournament in Bermuda.

### Running

Avid runner, having completed the Manchester marathon, raising £1200 for charity.

### Kaggle

Entering Kaggle competitions and working with public datasets.