

MADHAV KHANAL

Winter Park, FL | (689)2491793 | mkhanal@rollins.edu | www.linkedin.com/in/madhav-khanal3145/

EDUCATION

Rollins College, Winter Park, FL

- *BA in Mathematics and Computer Science with a Minor in Physics and Data Analytics(Intended)*
- *Awards: Alfond Scholarship (\$80k per year, selected as 5 out of 10,000+ applicants)*
- Cumulative GPA: 4.0/4.0

AWARDS

National Delegate, 53rd International Physics Olympiad : 2023
Gold Medal, International Youth Math Challenge : 2023
Honorable Mention, International Math Modelling Challenge : 2023
Certifications: Data Analysis Using SPSS, Python Data Science, Machine Learning from Stanford, Qisit Global Summer School 2023, Algorithms from Stanford, Infectious Disease Modelling from Imperial College London, Business Analysis and Process Management

TECHNICAL SKILLS

- *Computer Languages:* C++, Python, R, SQL, Java, HTML, CSS, JavaScript
- *Hard Skills:* Machine Learning, Math Modelling, Stochastic Modelling, Artificial Intelligence, Data Querying, Web Development, Data Analytics, Business Analysis, Quantum Computing, Statistical Analysis, Deep Learning
- *Soft Skills:* Presentation, Speech, Teaching, Leadership, Team-Work

EXPERIENCE

IT Help Desk Assistant, Rollins College, WinterPark, Florida 11/24-Present

- Helped students and staff with day-to-day technical problems
- Conducted sessions on the proper utilisation of IT resources
- Provided excellent customer service and satisfaction

Programming Director, WPRK Radio Station, Rollins College, WinterPark, Florida 11/24-Present

- Interviewed volunteers and co-ordinated on-air schedules
- Taught usage of audio devices and developed communication and interpersonal skills by hosting different people

Quantum Computing Researcher, Incubate, Cambridge, MA 06/23-09/23

- Studied quantum algorithms under a scientist at CERN and implemented them in Qiskit
- Solved the General Planar Graph Coloring Problem using Grover's Algorithm
- Reduced the time complexity of Planar Graph Coloring Problem to $O(\sqrt{N})$

Research Assistant, Tribhuvan University, Kathmandu, Nepal 06/23-08/24

- Reviewed literature in epidemic modelling facilitating a deeper understanding of the epidemic in Nepal
- Gather 1000+ COVID-19 data points in Nepal ensuring accuracy and analysing the trend in data
- Developed extended compartmental disease model for COVID-19
- Simulated the model in Python and R

Software Engineering Intern, Mero-Shiksha e-Learning, Kathmandu, Nepal 06/23-06/24

- Set up input-output functionality using Django
- Used Scikit-learn to suggest similar articles based on keywords
- Set up rate limiting to prevent server overload
- Integrated push notifications using Firebase Cloud Messaging
- Collaborated with senior developers and helped in unit testing and debugging

Teaching Intern, Budhanilkantha School, Kathmandu, Nepal 06/22-06/23

- Taught 500+ classes in computer science to high schoolers
- Expanded my skillsets in Excel, Office, SPSS and Data analysis while making reports and presentations

RESEARCH

- Solving the General Planar Graph Coloring Problem Using Grover's Algorithm
- Mathematical Modelling of Infectious Diseases: Dynamics in Diverse Aerological Conditions

- Analysing the Fitness of Gompertz Curves for Modelling COVID-19 Infections

PROJECTS

Chess

10/24-11/24

- Created dynamic chess board and pieces
- Added checks and checkmate logic
- Integrated reinforcement learning to train AI opponent
- Utilised Q-Learning and Minimax Algorithms to improve decision making
- Error handling for illegal moves
- Deployed with installable dmg app

COVID Mortality Predictor Neural Network

03/17-02/20

- Built a deep learning model using TensorFlow in Python
- Trained with 1M+ real patient data
- Predicted the COVID mortality based on age, gender and so on with 95%+ accuracy

Self Care AI Assistant

10/24-Present

- Built a website for helping people with physical and mental well-being
- Developed and trained an Assistant AI with OpenAI API integration for live personalised assistance

EXTRACURRICULARS

Habitat for Humanity, St. Petersburg, FL

09/24-Present

- Helped in the construction of houses for the homeless

Abhichal Karmayodha, a novel on homeless children

09/24-Present

- Published a novel on homeless children selling 10,000+ copies