PRAMITHAS UPRETI

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EDUCATION

Colby College, Waterville, ME **Bachelors 2026**
Computer Science & Mathematical Sciences Double Major with a minor in Philosophy **Cumulative GPA: 4.05**
4-time Dean's List
Sample Coursework: Algorithm Design & Analysis, Data Structures & Algorithms, Data Visualization, AI: Computer Vision, Programming Languages, Real Analysis, Linear Algebra, Mathematical Reasoning

University of Oxford, Oxford, UK **October 2024-Present**
Visiting Non-Matriculating Student of Mathematics & Philosophy
Sample Coursework: Probability & Ethics

EXPERIENCE

Summer Research Assistant, Colby College, Waterville, Maine **May 2024-August 2024**
- Conducted research on dynamic pricing algorithms in the context of the online set cover problem, focusing on the client-server model with resource-specific pricing constraints.
- Developed online algorithms adaptable to dynamic pricing, analyzing their efficiency & applicability.
- Collaborated to structure theoretical frameworks & evaluate algorithmic efficiency in real-time client selection scenarios then authored documentation on algorithmic approaches & performance analysis.

Teaching Assistant, Colby CTL, Waterville, Maine **December 2022-May 2024**
- Supported students in CS252, CS231, MA130, MA120, & PL151, providing targeted assistance in computer science, mathematics, & philosophy classes.
- Collaborated with professors to grade assignments & quizzes; led help sessions to clarify course concepts & improve students' logical understanding.

Summer Research Assistant, Colby College, Waterville, Maine **June 2023-August 2023**
- Conducted comprehensive bibliometric analysis of 5 decades of ice-core science, mapping research trends & influences.
- Developed a Guided Machine Learning model using deep learning frameworks like PyTorch & TensorFlow to make predictive analysis in climate research applications.
- Worked on dynamic topic classification & geographic distribution within ice-core science research.

Computer Allocation Assistant, Colby ITS, Waterville, Maine **September 2022-May 2023**
- Managed computer systems setup, including hardware configuration & network connectivity, to ensure seamless operations for faculty, staff, & classrooms.
- Oversaw the allocation & maintenance of peripherals, optimizing resource distribution & troubleshooting technical issues.

PUBLICATION

Bender, M., Desai, A., He, J., Thompson, O., **Upreti, P**. (2024). *Dynamic Pricing Algorithms for Online Set Cover*. arXiv preprint arXiv:2409.15094. Available at https://arxiv.org/abs/2409.15094

PROJECTS

- **Quantum Particle Simulator**: Designed & implemented a robust simulation framework that models the probabilistic behavior & wave function of a single quantum particle in a bounded one-dimensional potential. Achieved realistic quantum state representations & validated results against standard quantum mechanical principles.
- **AI Trash Detection Model**: Developed a series of AI models using Computer Vision, TensorFlow, Keras & Hugging Face transformers for trash identification across complex terrains as a part of a group. Collaborated with a research team to analyze & map trash accumulation on Allen Island, contributing to environmental studies.

ACTIVITIES

AI Camp, Roux Institute at Northeastern University, Portland, Maine **July 2023**
- Collaborated to apply ML models for data analysis, utilizing hands-on expertise with data-driven AI solutions.

Researcher, NASO Asteroid Search, Nepal **March 2021-April 2021**
- Conducted analysis of telescopic data using Astrometrica software to identify & catalog celestial objects in NASA's servers.

SKILLS

Software: Python, Java, JavaScript, C, R, MATLAB, Node.js, Git, CSS, HTML, Microsoft Office Suite
Languages: Fluent in English, Hindi & Nepali