

# PRAMITHAS UPRETI

[pramithas.com](http://pramithas.com) | [pupret26@colby.edu](mailto:pupret26@colby.edu) | [linkedin.com/in/pramithasupreti/](https://www.linkedin.com/in/pramithasupreti/) | [github.com/pralfredo](https://github.com/pralfredo) | (207) 313 9577

## EDUCATION

<b>Colby College</b> , Waterville, ME Computer Science & Mathematical Sciences Double Major with a minor in Philosophy 4-time Dean's List Sample Coursework: Algorithm Design & Analysis, Algorithmic Game Theory, Software Engineering, Data Structures & Algorithms, Data Visualization, AI: Computer Vision, Programming Languages, Real Analysis, Linear Algebra, Mathematical Reasoning, Mathematical Modeling, Differential Equations	<b>Bachelor of Arts 2026</b> <b>Cumulative GPA: 3.90</b>
<b>University of Oxford</b> , Oxford, UK Visiting Non-Matriculating Student of Mathematics & Philosophy Sample Coursework: Probability & Ethics	<b>Oct 2024-Mar 2025</b>

## EXPERIENCE

<b>Data Analytics &amp; Research Intern</b> , International Sibling Society, Las Vegas, Nevada <ul style="list-style-type: none"><li>Spearheaded the design &amp; implementation of scalable data collection frameworks in Python to monitor user acquisition, engagement, retention, &amp; platform performance, enabling evidence-based evaluation of organizational impact.</li><li>Developed interactive dashboards, KPI reporting systems, &amp; advanced data visualizations that transform complex datasets into actionable insights, supporting strategic decision-making, performance optimization, &amp; A/B testing initiatives.</li><li>Partnered with cross-functional teams across product, research, &amp; operations to leverage statistical analysis, impact measurement methodologies, &amp; data-driven experimentation to assess &amp; enhance the effectiveness of a global nonprofit platform serving stakeholders in 190+ countries.</li></ul>	<b>Jun 2026-Aug 2026</b>
<b>Research Assistant</b> , Colby College, Waterville, Maine <ul style="list-style-type: none"><li>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.</li><li>Developed online algorithms adaptable to dynamic pricing, analyzing their efficiency &amp; applicability.</li><li>Collaborated to structure theoretical frameworks &amp; evaluate algorithmic efficiency in real-time client selection scenarios then authored documentation on algorithmic approaches &amp; performance analysis.</li></ul>	<b>May 2024-Aug 2024</b>
<b>Research Assistant</b> , Colby College, Waterville, Maine <ul style="list-style-type: none"><li>Conducted comprehensive bibliometric analysis of 5 decades of ice-core science, mapping research trends &amp; influences.</li><li>Developed a Guided Machine Learning model using deep learning frameworks like PyTorch &amp; TensorFlow to make predictive analysis in climate research applications.</li><li>Worked on dynamic topic classification &amp; geographic distribution within ice-core science research.</li></ul>	<b>Jun 2023-Aug 2023</b>
<b>Teaching Assistant</b> , Colby CTL, Waterville, Maine <ul style="list-style-type: none"><li>Provided targeted instruction to students across seven courses (CS333, CS252, CS231, CS152, MA130, MA120, &amp; PL151) in computer science, mathematics, &amp; philosophy.</li><li>Collaborated with professors to grade assignments &amp; quizzes; led help sessions to clarify course concepts &amp; improve students' logical understanding.</li></ul>	<b>Dec 2022-Present</b>

## PUBLICATION

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

## PROJECTS

- LogicWealth** | Python, Z3, FastAPI, JavaScript | Built an SMT-inspired portfolio construction system that models investment mandates as logical and arithmetic constraints over asset-selection and portfolio-weight variables. Encoded 50 large-cap assets under 8+ constraint classes, including sector exposure, ESG, liquidity, beta, volatility, cardinality, weight bounds, and exclusion diagnostics.
- Semantic Logic Editor** | React, TypeScript, Vite, Formal Semantics | Built an interactive logic-authoring system that transforms mathematical prose into structured definitions, theorems, proofs, and dependency graphs. Implemented parsing, formal-object extraction, diagnostic feedback, and visual dependency mapping to expose the logical structure of mathematical arguments.
- Logic Visualizer** | JavaScript, HTML, CSS | Built an interactive propositional-logic visualization tool for evaluating formulas, truth tables, and logical circuits in real time. Implemented client-side parsing, state management, and truth-functional graphics to show how logical operators transform inputs into outputs.
- Quantum Particle Simulator** | Python | Built a numerical simulation of a quantum particle in a bounded one-dimensional potential, modeling wave-function evolution and probability distributions over time. Validated outputs against core quantum-mechanical constraints, including normalization and boundary behavior.
- AI Trash Detection Model** | Python, TensorFlow, Keras, Hugging Face | Developed computer vision models for trash identification across field-image datasets from Allen Island. Supported environmental mapping by classifying debris in complex terrain and contributing model outputs to accumulation analysis.

## ACTIVITIES

<b>Carnegie Mellon University</b> , Summer School, Pittsburgh, Pennsylvania <ul style="list-style-type: none"><li>Attended the summer program in Logic &amp; Formal Epistemology. Topics include Epistemic Logic &amp; Topology, Decision Theory &amp; AI Agent Foundations, &amp; Gavagai to a full grammar.</li></ul>	<b>Jun 2026</b>
<b>Roux Institute at Northeastern University</b> , AI Camp, Portland, Maine <ul style="list-style-type: none"><li>Collaborated to apply ML models for data analysis, utilizing hands-on expertise with data-driven AI solutions.</li></ul>	<b>Jul 2023</b>

## SKILLS

Programming: Python, JavaScript/TypeScript, Java, C++, HTML/CSS, SQL, LaTeX, React, Vite, FastAPI, Jupyter, Git/GitHub, TensorFlow, Keras  
Languages: Fluent in English, Nepali, Hindi, Urdu & Elementary proficiency in Latin, Chinese, Spanish