Rayan Barry

CONTACT INFORMATION

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PROFESSIONAL EXPERIENCE / EDUCATION

2022-2026 **Ph.D., Chemical Engineering** (GPA: 4.0/4.0). University of Minnesota.
Thesis: Computational Models for Thin Liquid Films. Expected: August 2026.

2026 **M.S., Mathematics** (GPA: 4.0/4.0). University of Minnesota.
Developed strong quantitative and analytical skills through rigorous coursework in Probability Theory and PDEs.

2023 **M.S., Computer Science** (GPA: 4.0/4.0). University of Minnesota.
Implemented novel algorithms for sentiment analysis using BERT models, and applied them to a dataset of Amazon Reviews from 2017-2019.

2021-2022 **Process Engineer**. DuPont, Tonawanda, NY.

- Supervised production line 2 in Corian sheet manufacturing at the Yerkes plant
- Increased uptime from 56% in 05/2020 to 72% in 09/2021 through process improvements
- Improved First Pass Quality from 82% to 93%

2021 **B.S., Chemical Engineering** (GPA: 3.87/4.0). University of Washington.
Minors in Mathematics and History.

2020 **Process Engineer** (Summer Intern). DuPont, Tonawanda, NY.
Received return offer as full-time process engineer.

2019-2020 **Seasonal Retail Specialist**. Apple Inc., Bellevue, WA.

CONTRIBUTIONS & HIGHLIGHTS

1. **Interests:** problem solving; spectral methods; diffusion models; deep learning; optimization; data engineering; theoretical machine learning; data science; deep reinforcement learning; physics-informed neural networks.
2. **Publications:**

   [1] Rayan Barry and Satish Kumar. "Non-uniformities in miscible surfactant-laden two-layer thin liquid films." Journal of Fluid Mechanics 1030 (2026): A37.

   [2] Rayan Barry and Satish Kumar. "Early-Stage Drying of Multicomponent Thin Liquid Films." Manuscript Under Review.

   [3] Rayan Barry and Satish Kumar. "Early-Stage Crystal Growth Model for Drying Thin Liquid Films." Manuscript Under Review.
3. **Software:** Proficient in Python, C/C++, Julia, SQL, Java, Vim, PyTorch; tools include Git, Docker, Apptainer, VS Code.
4. **Talks:** iPrime 2022-2026, ISCST 2023, SIAM 2024, APS 2025.
5. **Awards:** Teletzke Family Fellowship, PPG Fellowship, PPG Poster Awards, Howard H. Wahl & Harry Tecklenburg Merit-Based Scholarships, Dean's List 2018–2021.
6. **Languages:** fluent in English and French.