James Harbour

Resume

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Mathematics Experience

2023 **UChicago REU**, Full participant, Researching noncommutative ergodic theory.

2022 **UVA Research**, I took an intensive one-on-one reading and research course in operator algebras with Dr. Benjamin Hayes. Living expenses were covered by a grant (see below).

- Completed the undergraduate requirements for mathematics major during high school.
- Same mathematics courseload as UVA's 1st year mathematics PhD students (and more) during freshman year. Passed the analysis (real & complex) PhD qualifying exams.
- **Graduate level courses taken**: Functional Analysis, Measure Theory, Complex Analysis, Differential Topology, Algebraic Topology, Algebraic Geometry, Representation Theory, Algebra II, Algebra I.

Selected Talks

4/23 **Maximal rigidity for L^2-cohomology of Groups and Beyond**, *UVA Operator Theory seminar*

11/22 **Index Rigidity for type-II_1 Subfactors**, *UVA Operator Theory seminar*

11/22 **Construction and examples of the von Neumann dimension of Hilbert modules**, *UVA Operator Theory seminar*

Conferences

05/23 **Great Plains Operator Theory Symposium**, *Ohio State University*

05/23 **Noncommutative Geometry and Operator Algebras (NCGOA) Spring Institute**, *Vanderbilt University*

01/23 **Joint Math Meetings**, *Boston*

10/22 **East Coast Operator Algebras Symposium**, *Michigan State University*

06/22 **Thematic Program in p-adic L-functions and Eigenvarieties**, *University of Notre Dame*

Financial Experience

- **Member of UVA's Alternative Investment Fund** An investment club managing a portfolio of $\$60,000$ AUM with both systematic and discretionary trading strategies. Rigorous selection process with multiple interviews and a 3% acceptance rate.

Programming Experience

Proficient In Java, C, C++, Assembly, Python, Javascript, LaTeX, SageMath, Mathematica. I have taken courses in algorithmic economics, computer architectures, and machine learning.

Honors and Awards

- Various Grants/Funding/Travel (see my website for more info)
  - $2000 Supporting summer research in operator algebras alongside Dr. Benjamin Hayes.
  - $500 For travel to the Notre Dame workshop in Elliptic Curves and Modular Forms
  - $1000 Supporting travel fees to attend the East Coast Operator Algebras Seminar.
  - $1500 Supporting travel fees to attend the Joint Mathematics Meetings
- Mathematics PhD Qualifying Exams - Passed Real & Complex Analysis Exams (as a freshman)