REU-CAAR: Research Experience for Undergraduates in Combinatorics and AI for Applied Research

William Gasarch-Director
Laxman Dhulipala-Co Director
Mentors!
Students!

Nuts and Bolts of REU-CAAR

Time and Money

1. June 1- August 14 (10 weeks) (Move in and welcome dinner on May 31).
2. $7000 stipend.
3. Housing and some Meal Money.
4. Excellent student-to-teacher ratio.
5. For more info
   `https://www.cs.umd.edu/projects/reucaar/`
   and of course this talk!

Activities (Short Version)

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   In the first year of program — 2013—Facebook was new.

Descriptions The Projects

The Research

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I-O Efficient Parallel Algorithms: Theory & Practice

Mentor Laxman Dhulipala

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Bill Note Laxman has worked on parallelism in industry.

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NN for Games, Puzzles, & the Physical World

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Is there anything Neural Nets can't do?

Pedagogical Ramsey Theory

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Bill's Comment My Favorite Project!

How to Apply to REU-CAAR

Activities. Long Version

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4. First and Second week and maybe later—Talks from some of the mentors on their projects.

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5. Final presentations the last week.

Applying to to REU-CAAR

Qualifications

1. Discrete Math (or good math background). Algorithms a plus.
2. Knowing how to program.
3. See website for prerequisites for some projects.
4. US Citizenship for NSF funding. But see next point.
5. We may be able to take non-citizens and give them housing but not stipend.

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Misc and Summary

Quotes from Former Students

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I had no idea there was so much research behind k-means until this project. I also got the chance to improve my C++, which will come in handy in the future.

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Bill Comment He should combine his interests and write parallel algorithms to play games.

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Continued on Next Slides

Quotes from Former Students Cont.

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Bill Comment Reading the letter is an **incredible experience**

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Nathan Hurtig (Mentored by William Gasarch)

Spending the summer at REU-CAAR was a valuable experience for me. I was given the independence to work on a real research problem, but my mentor (Dr. Gasarch) was readily available for guidance and made sure I had the tools I needed to succeed.

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Bill Comment I agree with everything he wrote.

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2. Bond with fellow students
3. Get a taste of graduate school
4. Have a great time!

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Questions!