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)

1. Research, Talks, and Research Talks.

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

Descriptions The Projects

The Research

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3. The projects range from THEORY to PRACTICE.

I-O Efficient Parallel Algorithms: Theory & Practice

Mentor Laxman Dhulipala

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Prereq Data Structures and Algorithms. Programming Skills in C.

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Bill Note Laxman has worked on parallelism in industry.

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Bill's Comment Proof Assistants! Quantum computing!
Is there anything Neural Nets can't do?

Pedagogical Ramsey Theory

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Sample Theorem

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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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4. Other stuff that is on form

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3. Personal Statement should elaborate on what you want to work on, why you are qualified, and why you're interested.
4. These programs are very competitive so apply to many. See next slides.

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REU FINDER for STEM:

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Misc and Summary

Quotes from Former Students

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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

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

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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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3. Get a taste of graduate school
4. Have a great time!

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Questions!