TA’s

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This is an REU-style summer program.

The program is virtual.

We hope to provide a healthy balance of

- stimulating mathematics
- exposure to career-building guidance
- virtual social events
Week 1: Intro and projects

This week should focus on:

- meet and greet
- project introductions and overview
- choosing projects
- virtual program logistics
Project descriptions

There are 6 projects associated with this program:
- Iterative methods for electromagnetics problems
- Randomized singular value decomposition and its applications
- Efficient eigensolvers and their applications
- Theoretical and computational aspects of expressive power of deep neural networks
- Graph spectral clustering and sparsification
- Random projections and dimension reduction

Friday @ Noon: you will submit a **ranked list of 3 projects**.

End of day Friday: organizers + TA’s form 6 groups of 2-4 participants/group
Student presentations

Afternoons Tuesday - Thursday.

Tell us about yourself!

- 5-10-ish minutes, format up to you
- Professional biodata: institution, interests, major/concentration, plans after undergrad, etc
- Mathematical/computational interests in this program
- Best virtual online game you’ve played
- Any personal info you’re comfortable sharing: favorite food, sports, hobbies, etc.
Weeks 2+

This is a virtual program.

But we still expect all 6 groups to interact or meet in some way daily!

Specific meeting format is flexible.

Mentors/guides for each group:

- 2 TA’s
- 2 organizers

The mentors exist to help you: don’t be shy to approach them!

Success of each group relies on interaction!
Goals and deliverables

What is expected in this program?

- Week 4/5: mid-program formal(-ish) presentations
- Week 8: end-of-program formal presentations
- (Optional) Technical report of investigation, progress, and future directions

What do I get out of this?

- mathematical + computational knowledge and experience
- experience in virtual collaborative tools and software
- opportunity to share group’s work at conferences (e.g., poster @ JMM)
- possible journal publication
Virtual logistics

Suggested interaction tools:
- email
- Zoom
- Slack
- ...

Suggested technical tools:
- $\LaTeX$(Overleaf)
- Matlab
- Python
- Version control (Github, ...)
- ...
- ...?
Organizer tips

Talk to people.

Talk to lots of people – fellow group members, participants, TA’s, organizers, ICERM staff

Do not be afraid to ask questions – technical, career, social, etc.

Suggest ways we can improve anything program-wise

If something (anything) is not working, tell us, and/or TA’s, and/or ICERM staff.

Ideas for virtual social events? Tell us!

Organize participant-only virtual social events (Netflix parties?)