



IEEE Rochester Section

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March 2021 Newsletter

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Message from the Chair

Dear Colleagues,

The IEEE was happy to report an improvement in membership renewal at the end of 2020 to start 2021 on a positive note. The Rochester Section remains dedicated to our membership with many events in the works for 2021. We are also increasing our outreach efforts to gain and support students with the resources that come with IEEE membership.



Congratulations to Rajeev Balasubramonian PhD, a Rochester Section alumnus who is part of the IEEE Fellows Class of 2021. Rajeev's connections to the Rochester Section go back to his PhD work in the Department of Computer Science at the University of Rochester. He was recognized as an IEEE Fellow for his contributions to in-memory computation and memory interface design.

The next IEEE Rochester Section virtual ExCom meeting will be on April 6th from noon until 1pm via WebEx (vTools# 255223).

Stay healthy, and best regards,

Signal Processing Society Talk

On 1/18 the Signal Processing Society held an event entitled "Function space data representation of temporal signals for machine learning". The corresponding talk focuses on how to apply Gaussian processes to model interactions between inputs and outputs of a system, when we only have access to those two signals, in order to predict the system's properties.

Applications included predicting material properties by applying these models to experimental input and output curves.

This event, conducted on-line, had participants ranging at least from GMT-5:00 to GMT+5:30 – highlighting an unexpected aspect virtual meetings.

Data on manifolds as signals

Curves \rightarrow Surfaces \rightarrow ... \rightarrow Manifolds
2 3 d

Locally Euclidean but globally curved i.e. nearness differs globally

We are interested in signals on manifold i.e. $f : \mathcal{M} \rightarrow \mathbb{R}^n$

We again observe finite evaluation of the function at points sampled on the manifold

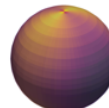
Two key things to keep in mind :

- 1) Data points are connected on the manifold
- 2) Functions are continuous

Example : Temperature snapshot on a sphere (earth)

$$f : S^2 \rightarrow \mathbb{R}$$

Q : Can we learn from a collection of these snapshots?



IEEE Member Benefits

Encourage Electrical Engineering colleagues and students to join IEEE so they can take advantage of the many benefits that IEEE offers. In February, for instance, IEEE-USA offered members a free e-book, authored by Dr. Robert Danielle, that provides sage advice on career transitioning to professionals.

IEEE is the world's largest technical professional organization for the advancement of technology. There are many membership benefits for both student and professional members, including discounts on IEEE society membership, conferences, and publications. Commercial discount programs include Dell Technologies, UPS, and Wolfram. Liability, travel, auto, and home insurance programs are available.

Terra Science and Engineering Fair News

The Rochester IEEE Section supports pre-college student activities including the Terra Rochester Finger Lakes Science and Engineering Fair. The Fair is seeking judges, and IEEE members are urged to consider judging for the fair this year. With your enthusiasm and a sincere desire to encourage middle and high school students, you help them to learn about the Science, Technology, Engineering, and Mathematics fields, and perhaps help launch them into Electrical Engineering careers. For more information, visit <http://ny-trfsef.zfairs.com/>.

This year only, the Terra Rochester Finger Lakes Science and Engineering Fair is also accepting registration from students in the Western New York Regional Science and Engineering Fair region, comprising these counties: Erie, Genesee, Niagara, Orleans, and Wyoming. For more information, visit <https://terrafairs.org/wnyrsef.html>



STRATUS 2021

Pre-registration for this exciting conference is open. Visit the site at stratus-conference.com to find out more about topics such as remote sensing, 3d and multi-view imaging, environmental monitoring and modelling, platforms, calibration, sensor, and imaging systems, technologies and applications, algorithm and image processing, photogrammetry, geohazards and extreme events, and single unit and swarm missions.

IEEE Rochester Section Events

Please check the events to ensure they are as scheduled below. Visit events.vtools.ieee.org/m/vtools/# for details about any of these events.

Event	Vtools #	When	Where
EXCOM Meeting	255221	March 2 nd , 11:50 – 13:00	Via Webex
Terra Rochester Finger Lakes Science and Engineering Fair		March 20 th	On-line
EXCOM Meeting	255223	April 6 th , 11:50 – 13:00	Via Webex
EXCOM Meeting	255224		Via Webex
STRATUS – GeoHazards and Extreme Events		May 17 th – May 19 th	Hybrid: on-line and at the Center for Tomorrow, University at Buffalo NY (New York state COVID-19 opening permitting)

