# CONNECTIONS

LATEST NEWS AND UPDATES FROM SEMICONDUCTOR RESEARCH CORPORATION



### **Pillar Science and SRC.org: A New Way To Collaborate**

In early 2021, we released the <u>2030 Decadal Plan for Semiconductors</u>, a 10-year plan that will help guide us as we look to navigate the roaring '20s and usher in the next golden age of semiconductor and ICT growth. These research efforts will transform the world over the next decade.

To ensure that we have the most effective research results, we prioritized finding a way to provide our members with better tools that give faster insight, enhance collaboration, and create richer relationships. The solution? The <u>Pillar Science</u> collaborative research platform. We selected Pillar because of its features: it can handle multiple file types, creates a safe data repository, and can scale with growth. This new platform will improve communication and create rich tech transfer opportunities between members, researchers, and SRC Research Scholars.

The Pillar Science app you use today is a result of intense collaboration with Pillar Science. We also received feedback from SRC members througout the entire process. Pillar Science officially launched on December 20, 2022, thanks to the tireless efforts of SRC and <u>Pillar Science</u> staff - and many cups of coffee! We hope that you take time to familiarize yourself with the platform and help resources. <u>GET STARTED!</u>



# Stanford PhD Candidate Receives Multiple Awards



Congratulations to <u>Asir Intisar Khan</u> (EE PhD candidate, Stanford) on receiving the <u>IEEE's 2022</u> <u>Electron Devices</u> <u>Society (EDS) Student</u> <u>Fellowship.</u> Asir has participated in SRC research tasks for

Image Credit: Stanford.edu

<u>GRC</u> in LMD, as well as with <u>nCORE IMPACT</u> Center. Additionally, Khan received the <u>2022</u> <u>MRS Fall Meeting Gold Graduate Student Award</u>, as well as the <u>Best Student Presenter Award at</u> <u>MRS 2022</u>. Well done, Asir! 2022 has been your year, and we wish you all the very best in your future endeavors.

# **C-BRIC Researcher Named National Academy of**

### Inventors Fellow

Professor <u>Vijay</u> <u>Kumar</u>, University of Pennsylvania, has been named a <u>National Academy</u> of Inventors (NAI) <u>Fellow</u> for his research which focuses on creating autonomous ground and aerial robots, designing bio-inspired



Image Credit: Purdue.edu

algorithms for collective behaviors, and on robot swarms. He is a member of the National Academy of Engineering, the American Philosophical Society, and the American Academy of Arts and Sciences. Congratulations, Vijay!

# Auburn Engineering Professor Receives Inaugural Avram Bar-Cohen Memorial Medal



Image Credit: Auburn.edu

**Pradeep Lall,** Auburn's MacFarlane Endowed Distinguished Professor of Mechanical Engineering, is the inaugural

winner of the American Society of Mechanical Engineers (ASME) Avram Bar-Cohen Memorial Medal. The award is named for Avram Bar-Cohen, a stalwart in the field of electronic packaging. The ASME wrote that Lall was selected "for longlasting impact on state-of-art related to harsh environment electronic manufacturing and reliability, as well as significant contributions to reliability physics of fine pitch electronics in the development of electronics capable of sustaining operations of high temperatures and very high-g loads." Bravo, Dr. Lall! The honor is well-deserved. <u>Read the full story here >>></u>



# SRC Research Scholar, GA Tech Undergrad, Earns SRC Student Spotlight



Image Credit: L. Lubin

Lindsey Lubin, a 4th year undergraduate student at Georgia Tech, has had a busy and productive year. Most recently, she worked to develop a lighting system that tested the health impact of novel materials. Her responsibilities included implementing motion sensing, light dimmability, data collection, and Bluetooth compatibility through an Arduino Nano. By the end of her assistantship, she and her team successfully created a prototype of this lighting system. Outside of school, you can find her supporting the Georgia Tech community as the Social Co-Chair of WECE: Women in Electrical and Computer Engineering and as Treasurer of the Nu Beta Chapter of Alpha Kappa Alpha Sorority. She aims to increase the involvement and support of black women in the engineering field. As an avid video gamer since childhood, her personal goal is to code a story-based video game from start to finish. Lindsey, all of us here at SRC applaud your research and wish you the best in your future endeavors.

## Stanford EE Professor Eric Pop Promoted to APS Fellow



Image Credit: Stanford.edu

**Eric Pop** in the School of Engineering was one of three Stanford faculty members named <u>American Physical</u> <u>Society Fellows</u>. Pop was nominated "for contributions to

Associate Professor

**Zhiru Zhang** has

Fellow for his

synthesis and

Dr. Zhang is an

in the School

been named IEEE

contributions to

field-programmable

gate array high-level

accelerator design.

Associate Professor

the physics of electrical and thermal transport in one- and two-dimensional materials, and their applications to transistors and data storage." Pop is also a member of Bio-X and an affiliate of the Precourt Institute for Energy. Professor Pop is a SRC <u>GRC,</u> nCORE, and JUMP researcher. Professor Pop, congratulations on this prestigious recognition.

## Cornell Professor Zhiru Zhang Elevated to IEEE Fellow



Image Credit: Cornell.edu

of Electrical and Computer Engineering at Cornell University and a member of the Computer Systems Laboratory. Professor Zhang, on behalf of SRC, congratulations on receiving this honor that is so well-deserved.



#### JANUARY 2023

#### **Tech Transfer Series**

Wrapping up on 2022, Automotive Electronics researchers from Michigan State (2896.001) have their innovative Multi-Modal (2D/3D) Sensor fusion patent <u>published by the PTO</u>. Detection of objects and identifying their precise locations within an image is very crucial in Autonomous Vehicle applications which is a 25+ billion market today and growing. However, even if we achieve 100% object detection accuracy within a 2D image via precisely localized bounding boxes, there is still a great deal of information that is needed in order to infer and anticipate what these objects will do next. In addition, **Hayder Radha**, **Su Pang**, and **Daniel Morris** won the Honorable Mention Award for the Argoverse 3D Tracking Challenge organized by Argo AI. The team's work is strongly supported by Intel, Samsung, and Texas Instruments as part of the successful <u>Automotive Electronics research program</u> which wrapped up in 2022.



#### *Top 5 SRC Publications Viewed Across All Programs*

Don't miss the papers that received the most views on the SRC website over the last six weeks. Members of the associated programs have early access to the pre-publications.

- In-Memory Computing: from Devices to Applications A Cross-Layer Perspective
- ISKEVA: In-SSD Key-Value Database Engine for Video Analytics Applications
- PPIMCE: An In-memory Computing Fabric for Privacy Preserving Computing
- <u>Solving Memory Bottleneck with Transformable Logic Devices and 3D Hybrid-Core Systems</u>
- Massively Parallel Open Modification Spectral Library Searching with Hyperdimensional Computing

Connect With Us: in



4

Y

```
<u>Unsubscribe</u>
```