



**ICICLE**  
DEMOCRATIZING AI

# NEWSLETTER

ISSUE 13 - SEPTEMBER 2023



## REPRESENTING ICICLE AT NSF AI-HILL DAY

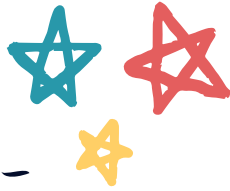


Dr. DK Panda and Dr. Tanya Berger-Wolf represented ICICLE at the AI Institute interactive showcase on September 18 & 19. This event was hosted by National Science Foundation at their headquarters and on Capitol Hill. This was an excellent opportunity for the Institute to demonstrate different technologies and cyberinfrastructure being developed to support ICICLE focus areas and use-inspired science domains.



## Upcoming Events

- *2023-10 ICICLE CI RELEASE*
- *NOV 2-3, 2023 ALL HANDS MEETING*



*Welcome*

DEBARGHA GANGULY  
QIANHENG ZHANG  
BEULAH KARROLLA  
ZHEDA MAI

**SAY HI TO OUR NEW MEMBERS !**

## SEPTEMBER SEMINAR SERIES

Maaz Gardezi, Assistant Professor in the Department of Sociology at Virginia Tech presented "Responsible Innovation in Precision Agriculture" at the ICICLE Seminar Series.



His interdisciplinary research and teaching focus on building sustainable and socially just regional, national, and international food and agricultural systems. Dr. Gardezi emphasizes the role of social science in promoting innovation and democracy, from design to governance. In his presentation he talks about approaches for co-designing innovative precision agriculture tools, including intelligent decision support systems and AI models, as well as how new environmental governance approaches emerge via sensor-driven performance-based incentives designed to promote sustainable farming practices.

**CLICK HERE TO VIEW PAST EVENTS AND RECORDINGS**

**ICICLE NEXTGENS AT  
GRACE HOPPER CELEBRATION'23  
EMPOWERING WOMEN IN TECH, THE WAY FORWARD**



The Grace Hopper Celebration (GHC) is the world's largest annual gathering of women in technology and computing, named in honor of pioneering computer scientist Admiral Grace Murray Hopper (1906-1992). GHC empowers women in tech, with AnitaB.org organizing the event. Grace Hopper, a Yale Ph.D. holder and Navy veteran, contributed to early computing, including the Harvard Mark I and UNIVAC I. GHC unites women in tech worldwide, celebrating their achievements, fostering diversity, and providing networking, mentorship, and career development opportunities. The conference addresses industry challenges, promoting gender equity and inspiring the next generation to excel in technology, all while honoring Grace Hopper's legacy.

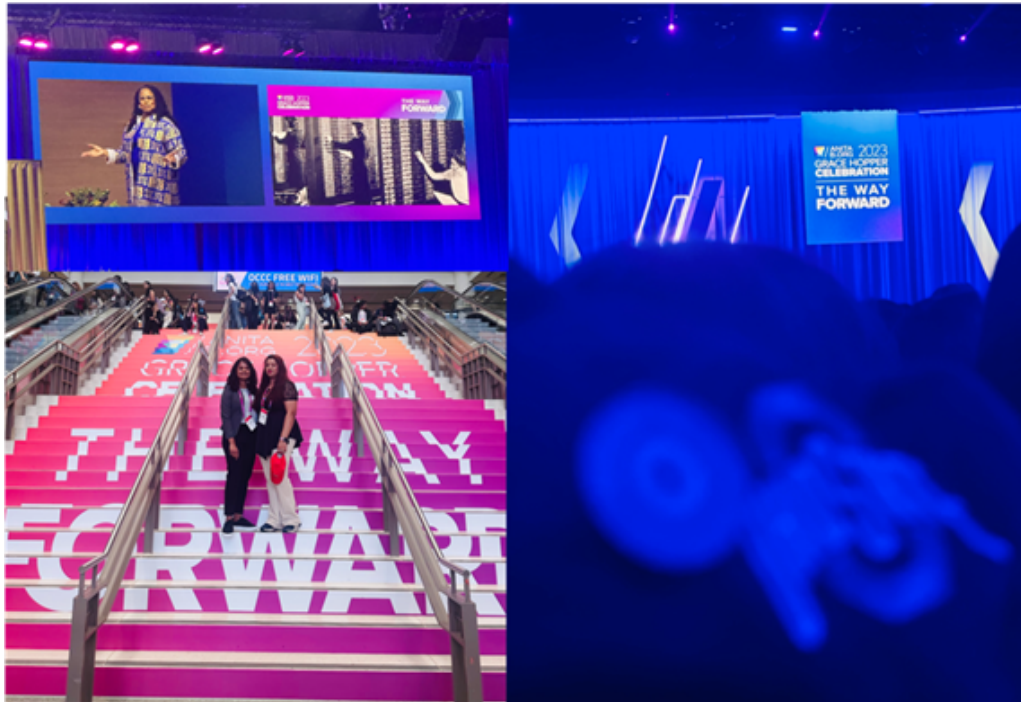
More information about the conference could be found [here](#) .

The objectives of ICICLE NextGens closely mirror those of the Grace Hopper's, as they both share a commitment to advancing diversity and inclusion within the technology sector, focusing on underrepresented groups. ICICLE NextGens' primary aim is to **foster diversity and inclusivity while championing professional growth.**

We achieve this by facilitating collaborations and networking opportunities within their community, ultimately enhancing career prospects for their members.



**ICICLE NEXTGENS AT  
GRACE HOPPER CELEBRATION'23  
EMPOWERING WOMEN IN TECH, THE WAY FORWARD (CONTD.)**



ICICLE NextGens had an opportunity to experience this Celebration with around 30K attendees and get inspired by various keynote talks, plenaries, braindates, community lounges, and tutorials.

Brenda Darden Wilkerson opens the Grace Hopper Celebration 2023 plenary focusing on "The Way Forward." She underscores the importance of D.E.I. initiatives targeting visible aspects like race, gender, age, and physical disabilities. Following that, Tunde Oyeneyin delivers an inspiring speech, sharing her remarkable journey of turning tragedy into triumph, guided by her mission to embody "**S. P.E.A.K.**" (**Surrender, Power, Empathy, Authenticity, Knowledge**).

NextGens connected with peers by participating in neighborhood lounges organized for participants within a community to provide a safe space where people could speak the same vocabulary without the boundaries of judgment. They could set up or go on brain-dates to brainstorm ideas and build networks with peers working in relevant fields and technologies. Apart from one-on-one or group discussion sessions, they had opportunities to attend tutorials hosted by leading engineers and scientists from pioneer organizations like Intel and J.P.M.C. These tutorials were mainly focused on AI and the ecosystem that enabled the building of ML/AI models for vision, language, and client-centric AI-driven solutions, specifically using LLMs.

**ICICLE NEXTGENS AT  
GRACE HOPPER CELEBRATION'23  
EMPOWERING WOMEN IN TECH, THE WAY FORWARD (CONTD.)**



Swathi Vallabhajosyula, ICICLE NextGens Community leader sharing her experience said, "Attending Grace Hopper for the first time was an absolutely exhilarating experience. Around 30 thousand attendees, mostly women, all gathered at one conference to celebrate the pioneers in computing and technology.

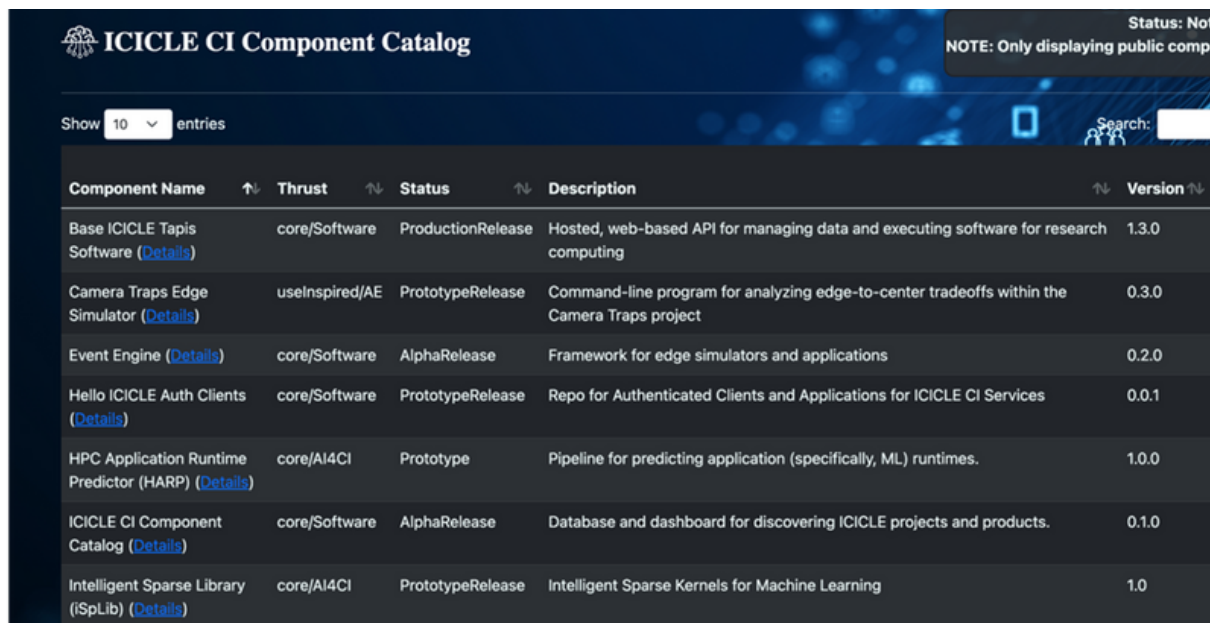
The energy in the room was infectious, and it filled me with positivity. I had the opportunity to share my research with industry experts and representatives from graduate schools, and I utilized ICICLE flyers to aid in this endeavor. By distributing the flyers while explaining my research, I effectively set the stage with context about ICICLE before diving into the technical intricacies of my work. This approach garnered more attention for my one-on-one interactions and significantly improved my networking experience. Some employers were keen on knowing more about ICICLE and how they could implement a similar framework into their workflows. "

## NEXTGENS STUDENT COMMUNITY MEETING

The September NextGens Community meeting took place on September 21, 2023, featuring guest speaker Carlos Guzman, who delivered a presentation titled "**Distributing ICICLE Research as CI/Software Components.**"

Carlos Guzman, an Associate Applications Developer at ICICLE, contributes significantly to various ICICLE projects, leading ICICLE Software releases. With a background as an AI consultant at Armstrong International, specializing in Vision and Audio models, he holds a Master of Science in Computer Science from DePaul University and a Bachelor of Science in Computer Science & Engineering from The Ohio State University.

Carlos walked the NextGens through the crucial steps for preparing the components for ICICLE Software Releases and shared valuable insights on component development for our user community.



The screenshot shows the ICICLE CI Component Catalog interface. It features a search bar, a 'Show 10 entries' dropdown, and a table of components. The table has columns for Component Name, Thrust, Status, Description, and Version. A note in the top right corner states 'NOTE: Only displaying public comp'.

Component Name	Thrust	Status	Description	Version
Base ICICLE Tapis Software <a href="#">(Details)</a>	core/Software	ProductionRelease	Hosted, web-based API for managing data and executing software for research computing	1.3.0
Camera Traps Edge Simulator <a href="#">(Details)</a>	useInspired/AE	PrototypeRelease	Command-line program for analyzing edge-to-center tradeoffs within the Camera Traps project	0.3.0
Event Engine <a href="#">(Details)</a>	core/Software	AlphaRelease	Framework for edge simulators and applications	0.2.0
Hello ICICLE Auth Clients <a href="#">(Details)</a>	core/Software	PrototypeRelease	Repo for Authenticated Clients and Applications for ICICLE CI Services	0.0.1
HPC Application Runtime Predictor (HARP) <a href="#">(Details)</a>	core/AI4CI	Prototype	Pipeline for predicting application (specifically, ML) runtimes.	1.0.0
ICICLE CI Component Catalog <a href="#">(Details)</a>	core/Software	AlphaRelease	Database and dashboard for discovering ICICLE projects and products.	0.1.0
Intelligent Sparse Library (iSpLib) <a href="#">(Details)</a>	core/AI4CI	PrototypeRelease	Intelligent Sparse Kernels for Machine Learning	1.0

## ICICLE COMPONENT CATALOG

## NEXTGENS STUDENT COMMUNITY MEETING (CONTD.)

The discussion covered the following key areas:

1. **ICICLE Releases:** An overview of recent releases was presented, along with an encouragement to leverage ICICLE's CI/Software components. Notable tools were highlighted for authentication, Tapis Services management, containerized application deployment, interaction with Knowledge Graphs, and execution time estimation.
2. **ICICLE CI Catalog:** Carlos introduced the audience to the ICICLE CI Catalog, offering a link to explore available components and providing guidance on sorting them by thrust, release, or maturity. Tracking various attributes was emphasized, and the four maturity types—Prototype, Alpha, Beta, and Production—were discussed as project labels.
3. **ICICLE GitHub:** The presentation touched upon ICICLE's GitHub repository, which serves as a platform for tracking metrics and managing components. Carlos also mentioned the availability of a Git Basic Training Module for those seeking access.
4. **Release Process:** Carlos outlined the release process, encompassing essential stages such as release meetings, feature freeze, QA testing, and final preparations. He elaborated on the subjects covered in release meetings and stressed the significance of the feature freeze and QA testing phases.
5. **Tips and Suggestions:** Valuable recommendations were shared for enhancing component usability and ease of installation. The importance of code commenting and testing was highlighted, specifically to Python users. The presentation underscored the crucial role of QA testing.
6. **Future Release:** Carlos provided a glimpse into the upcoming release, slated for January 2024, and hinted at introducing a Training Catalog offering comprehensive component documentation and tutorials. Carlos offered valuable insights into the processes and best practices surrounding transforming research components into software within the ICICLE Institute.

More information about “Distributing ICICLE Research as CI/Software Components” can be found in the presentation [here](#).

**Any questions regarding the NextGens Student Community, please contact Swathi directly at [vallabhajosyula.2@buckeyemail.osu.edu](mailto:vallabhajosyula.2@buckeyemail.osu.edu)**

**BE ON THE LOOKOUT FOR UPCOMING EVENTS FROM THE NEXTGENS COMMUNITY!**



## ICICLE TIPS ON AI ETHICS

A series of short videos that situates AI Ethics in an accessible, tip-oriented manner. The series is motivated by the belief that *forethought about ethical implications can create better outcomes*. Check out the tips listed below -

- **TIP #1:** REMEMBER THAT AI IS NOT INEVITABLE.
- **TIP #2:** RECOGNIZE THAT OUR RESPONSIBILITY IS TO THE POSITIVE OUTCOMES WE WORK TOWARDS
- **TIP #3:** DIMENSIONS OF PRIVACY
- **TIP #4:** FAIRNESS – FOCUS ON STAKEHOLDERS AND USE-INSPIRED SCIENCE
- **TIP #5:** TRUSTWORTHINESS – WHAT DOES IT TAKE TO TRUST AI AND CYBERINFRASTRUCTURE ?
- **TIP #6:** ACCOUNTABILITY – PROVIDES MECHANISMS FOR EVALUATING TRUSTWORTHINESS
- **TIP #7:** AI DEMOCRATIZATION IN ICICLE

Browse all Tips for AI Ethics [here](#)

## ICICLE TIPS ON ALLYSHIP

The Broader Impact Backbone Network team has created tips in video format on how we, here at ICICLE, can become better allies

**TO PROMOTE AN AWARE , INCLUSIVE , AND MORE DIVERSE COMMUNITY**



Browse all Tips for Allyship [here](#)



## RECENT PRESENTATIONS & PUBLICATIONS

### PUBLICATIONS

- Vallabhajosyula, Swathi, and Rajiv Ramnath “Towards Characterizing DNNs to Estimate Training Time using HARP (HPC Application Resource (runtime) Predictor)”, July 2023
- Vallabhajosyula, Swathi, and Rajiv Ramnath, “ Insights from the HARP Framework: Using an AI-Driven Approach for Efficient Resource Allocation in HPC Scientific Workflows”, July 2023

### PRESENTATIONS

- Patrick R. Huber, Allan Hollander, Matthew Lange, Courtney Riggle, Han-Wei Shen, Yamei Tu, Xiaoqi Wang, Rui Qui, Thomas Tomich, “The future of information is now: visualizing PPOD networks and the Internet of Conservation”, 2023 International Congress for Conservation Biology, July 2023
- Song Gao, "Geospatial AI and the Future of Mapping", In the National Academies, Geographical and Geospatial Sciences Committee Meeting, May 2023

Click [here](#) to view all ICICLE Presentations and Publications

## SUBSCRIBE TO ICICLE MAILING LISTS

The following mailing lists are available for ICICLE software and cyberinfrastructure releases, future updates and miscellaneous questions regarding installation/build problems, performance issues.

- **icicle-announce**: This is an announcement list only. If you would like to get information about future updates, software and cyberinfrastructure releases, publications, etc. related to the ICICLE project, you may subscribe to this mailing list. This list is open to public. You are welcome to subscribe to this mailing list yourself.
- **icicle-discuss**: This is a discussion list. This mailing list is meant for users to discuss all installation/build problems, performance issues, features and other miscellaneous questions related to the different software and cyberinfrastructure components of the ICICLE project. In order to post your questions and suggestions to this mailing list, you need to be a registered user of ICICLE with an organizational e-mail address and be a member of this list by subscribing to it with the same e-mail address. If you are not a registered user, please follow the procedure indicated under Download tab in the top menu to get registered. We welcome your interest to partner with ICICLE!

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