AUTONOMOUS SYSTEMS INITIATIVE

ASI Newsletter Volume 1 Issue 4 November 2020

Welcome to the November edition of the ASI Newsletter. This month we are branching out our features to include news from one of our important partners, ACAMP. There is also big news that we share about our financial future, and a researcher profile from Theme 4, Healthy Communities. We look forward to sharing this with you!

Partner Highlight

ASI partner ACAMP are announcing a new program supporting the innovation economy in Alberta. Graduating groups of students and high-tech innovators who need resources to commercialize their cutting-edge ideas can apply now to join the new Incubator for Technology Start-Ups (ITS).

ASI research teams, such as that working on the drone technologies featured last month, are working with ACAMP, the Alberta Centre for Advanced MNT Products, to develop prototypes and applications. This partnership is valuable to take research ideas to the next stage of development.

But ACAMP is also looking to further support technology innovation and contribute to Alberta's global competitiveness

ASI BREAKING NEWS

The Alberta Government's Ministry of Jobs, Economy and Innovation signalled its continued support for the Autonomous Systems Initiative (ASI) on October 21st when it announced its commitment to the next instalment of funding from the Major Innovation Fund. The $4.5 million earmarked for the Initiative gives a significant boost to research activity, allowing researchers to plan for the next stage of development.

Dr. Tony Qiu, ASI's Scientific Director, believes passionately in the future of autonomous systems. "Sensing, communication and computation technology are advancing dramatically. They lead to data-driven technology, with more data and connections building the foundations of the world around us. We have the ability to dramatically improve our communities in terms of both efficiency and safety. The scope of what is possible is beyond our imagination."

Through this support, the ASI will continue to enhance Alberta's bright future as a leader in these technologies, working with partners across the province to advance knowledge, innovative applications and sector skills.

UofA President Bill Flanagan. To see the full announcement, click on the image to go to the Government of Alberta's Your Alberta channel.

by reaching out to the next generation of researchers, including ASI research students. To do this, ACAMP have teamed up with Edmonton International Airport (EIA) to form the new Incubator for Technology Start-Ups (ITS).

Located in the Alberta Aerospace & Technology Centre (AATC), ITS is designed to help recent graduates create businesses based around competition teams, by providing engineering and business support services for young entrepreneurs. In other words, ITS helps new and budding entrepreneurs take their ideas for advanced technology products to market and make them successful.

ITS has a competitive pitch session to select four groups of founders for the one-year program. There is currently an opening for ONE new team to join their innovation hub immediately, and availability for four more in the spring of 2021. Business case ideas for the competition can be submitted at: ITSalberta.ca

Neil Goud, Executive Director of ITS Alberta and Director of Business at ACAMP, sees the potential of automated technologies in Alberta's business future. "The first cohort of the ITS program includes two companies developing robotics products. The depth of the technical talent in Alberta and the willingness of these founders to pursue business opportunities in this rapidly developing area speaks to the importance of support programs for advanced technology start-ups."

Winning groups will be provided with all they need to successfully bring an innovative idea to market:

- Assistance from ACAMP staff with the development and refinement of their product;
- Furnished office space at the AATC, featuring convenient access to the international airport
- Access to engineering assistance and the ACAMP lab, allowing them to produce and test prototypes;
- Design debugging and process development to prepare for mass manufacturing;
- Introductions to potential investors and other sources of funding;
- Broad-ranging expertise from a senior mentorship team to gain global market access.

Quick Facts:

- The ITS mission is to strengthen the Alberta innovation economy by helping recent graduates from advance technology programs start their own businesses
- Applications for the program are being accepted now until filled for the year-long program; another cohort will start in 2021
- Application forms and more information can be found on the ITS website: ITSalberta.ca
- ITS is a partnership between ACAMP and EIA, located at the AATC

For more information, please visit: ITSalberta.ca, follow @alberta_its on Twitter, or look for them on LinkedIn.
Neil Goud is the Executive Director at ITS Alberta and the Director of Business of Development at ACAMP

SAVE THE DATE: November 20th 2020, 1:00 – 4:00pm

The Autonomous Systems Initiative (ASI) is delighted to announce its 2020 virtual Sustainable Communities Workshop, "**Supporting Disaster Response and Recovery with Autonomous Systems**". The workshop will focus on the hurdles and opportunities in developing practical applications of unmanned aerial vehicle (UAV) technologies and infrastructure to extend capabilities for disaster response and management pre-and post-disaster.

This half-day ASI workshop will provide an opportunity for partnership between academia, industry and government regarding the latest developments in the field of disaster response and mitigation.

This event is free but registration is required. Please go to our Eventbrite page to register.
For more information please contact alberta.asi@ualberta.ca

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Spotlight on HQP

November's personnel spotlight introduces Dr. Jay Carriere, a Postdoctoral researcher from the ASI project team for Autonomous and Semi-autonomous Systems for Healthcare Delivery.

The development of autonomous systems in medicine is undeniably ground-breaking, offering up possibilities for our health and wellbeing that were unimaginable only a few years ago. Automated systems and tools can offer surgeons, doctors and patients precision in both diagnosis and treatment for a wide array of conditions and diseases. Under the supervision of ASI's project leader Dr. Mahdi Tavakoli, Jay Carriere has dedicated his nascent career to this vital research area, with an impressive set of research interests and skills centred on medical robotics, medical image processing, image-guided robotic-assisted surgery, and collaborative robotics.

"My particular focus on this project involves the development and control of medical robots," he explains. "I have done quite a bit of work on ultrasound-guided surgical robots for cancer treatment, primarily prostate and breast brachytherapy along with breast lumpectomy. I also work with robotic systems aimed at assisting ultrasound scanning, particularly echocardiography or heart ultrasound scanning, during the COVID-19 pandemic."

And this work has become even more pressing since the current health crisis has focused attention on securing the health and safety of both patients and health care workers. Autonomous systems offer the ability to provide precise and targeted care whilst maintaining the required distance to stop viruses from spreading.

Jay also represents the skilled talent springing from Alberta research. Rooted at the University of Alberta throughout, he earned his B.Sc. in Electrical Engineering before moving on to his Ph.D. in Biomedical Engineering.

This immersive engineering background gives him a broader perspective on the value of Autonomous Systems, not only in medicine but in industry as a whole.

"With current advancements in AI and Computer Vision I believe we are going to see autonomous systems in an increasing number of roles moving forward. Industrially, I think autonomous systems will become increasingly utilized to detect manufacturing defects or prevent device failures along with autonomous assembly or repair/reassembly."

About ASI

The Autonomous Systems Initiative (ASI) is a forward-thinking, multi-million-dollar research program that teams up research and industry experts across Alberta to develop automated technologies spanning key areas of health, transportation, sustainability, and industry. Understanding and developing these systems will help us to remain economically competitive in a global context while effectively addressing the challenges of climate change, efficient energy production and use, transportation needs, advanced manufacturing, and medical advancement. This program develops new Information, Communications and Technology (ICT)-enabled Autonomous Systems to support healthy and sustainable communities with a focus on sensing, communication, control, and computation technologies, all linked together by artificial intelligence.

Contact Us

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