

Ivey Entrepreneur

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Jason Swit, HBA '11 Cleaning up big data with explanatory AI

Jason Swit, HBA '11, and co-founder of nuAI, likes to keep his cards close to his chest.

For the past two years, Swit and his partner have been working on a startup idea that could bridge a multi-trillion-dollar problem plaguing companies around the world.

Today, big data and artificial intelligence are two important forces driving business innovation. However, they are often caricatured as magical solutions akin to “with science.” But the magic doesn’t work as seamlessly as one would think, and the

real potential of big data and AI computing, is often restricted by the facts on the ground.

The world is a messy place, and that is reflected in much of the existing data.

“A lot of companies want to adopt AI, but they are struggling. They’re struggling because their data is so messy that they can’t use it,” said Swit.

In 2016, IBM estimated that poor quality data costs companies over \$3 trillion in the U.S. alone.

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“FOCUSED ON DELIVERING RESULTS. PARDON THE LACK OF MARKETING.”

Jason Swit, HBA '11

InstituteBuzz



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By **Eric A. Morse**
Ron and Nancy Clark Chair in Entrepreneurship
Special Advisor to the President and Director of Entrepreneurship
Executive Director, Pierre L. Morissette Institute for Entrepreneurship

Increasing Engagement

At the beginning of each fall, we hope our students challenge their horizons, and limitations.

In the last few months, we have seen those results in very tangible ways. This September, we hosted our largest edition of the Entrepreneurship Bootcamp. For many of the participants, this was their first interaction with entrepreneurship, and we trust that the experience has changed the way they see the world; its problems and opportunities.

We recently had a three-fold increase in applications for our Graduate Student Innovation Scholars, which helps develop expertise in entrepreneurship, commercialization and knowledge transfer for graduate students involved in research.

Our New Venture Program has attracted over 200 students in the MBA and HBA sections. With the final presentations scheduled for late November, I look forward to thanking many of our Entrepreneurs-in-Residence, who make all of this possible for our students.

I’ve also had the opportunity to get involved with our Ivey Entrepreneur Podcast, and you can listen to the latest episode with QuantumShifter Matt Phillips of Phillips Brewing and Malting Co. A special thanks to Eric Janssen, HBA '09 for really pushing this initiative forward. We have a great line-up for the winter and spring, so stay tuned.

We will be celebrating Global Entrepreneurship Week throughout campus between November 18-25, 2019, with workshops, speaker events, start-up showcases, and a major hackathon.

With the growing relationship between Ivey and Western, we took an important step in forging together our two Advisory Boards. We have some major opportunities and challenges as we continue expanding entrepreneurship across campus, and I’m very happy to have the support and strategic insights of the Western Entrepreneurship Advisory Board.

Swit's venture, nuAI, is looking to automate the data preparation process with the help of sophisticated artificial intelligence, thereby bridging the gap between big data and solutions.

To understand nuAI, imagine sorting a variety of bills or receipts. Each store, hotel and restaurant, uses a different setup to display the relevant information. The human mind can understand these layouts and take in the information from each format, but most AI systems would require the information to be cleaned and structured to absorb.

Today, data scientists are often left spending hours cleaning and preparing data for consumption. By automating the repetitive functions, nuAI allows data scientists to focus on delivering a great product; and that can only be good news for the technology.

Preparing the world for big data

Swit's partner had a breakthrough in the 1970's when he discovered the inefficiencies in the foundation of artificial intelligence. The manual tweaking of data and models presented a major roadblock, a problem that is amplified today with the sheer volume of data to be cleaned. After 5 years of R&D, he finished developing his initial model.

With over 45 years of experience, across Europe and North America, on both R&D and enterprise projects, he was able to constantly evolve the engine with the most up-to-date research, while waiting for computing power capable of executing the next generation of AI.

As the technology caught up, he also found a business partner in Swit; someone who shared the same passion for neuroscience, and AI. After working together for almost a year, they incorporated nuAI in March 2019

Still, any discussion on artificial intelligence seems like science fiction,

and it's hard to separate facts from good marketing.

According to Swit, most of the companies in the field are still in lab-phase, and focused on narrow AI. With nuAI, Swit's team has developed a system that can manage multiple things at the same time.

Swit knows that they have something new, but he is wary about revealing too much just yet.

That secrecy often opens questions regarding the technology, and its true functionality. Part of the problem for Swit is the lack of protection provided by traditional patents. "AI is math, and you can't patent math," said Swit.

It has made the task of raising funding even more challenging as well.

"How do you raise money in a skeptical industry, where you don't want to share what you have, and investors don't want to invest until they see it working? They want to see projects working, or have the code released to be heavily vetted by their tech specialist."

Swit brought this concern to the New Venture Creation course at Ivey with Professor Larry Plummer, and received helpful feedback from the class. One of the key pieces of advice was to protect the equity and ownership behind the technology, building the technology through the help of other programs and partnerships.

Since then, nuAI has become part of the IBM Tech Accelerator, and an IBM business partner. nuAI is also NVIDIA Inception Program member, and part of the ventureLAB accelerator in Markham, ON.

IBM invested in-kind \$120,000 in

hardware, which allowed Swit and the team to start working on the nucleus (or engine) of nuAI on a dedicated IBM bare-metal server.

They are currently working on a number of projects as a means to test nuAI, and help provide additional funding for further development.

Later this year, nuAI's capabilities will be on show at an intimate gathering of IBM executives.

Together with IBM, Swit is also aiming to present nuAI at the IBM Global Think Conference in San Francisco, next May. Fair to say that the team have an exciting few months ahead.

The road to entrepreneurship

A former Western Mustang Hockey Player, Swit has had a storied career that has shaped his love for entrepreneurship, and technology.

His passion for technology started very early, from taking apart computers and figuring out how everything worked.

After completing his HBA in the accounting stream, Swit joined Ernst and Young, and was part of the EY Entrepreneur of the Year committee. He worked with Scott Hill, MBA '02 and his Hockey Night in Canada's Play-On! Program, organizing street hockey tournaments across the country.

Later on, during a stint with IT research and advisory company, Info-Tech Research Group (founded by Joel McLean, HBA '95), Swit's passion for technology was reignited, and lead him to working with Toronto-based startup, ExpertFile.

With starting a family came new changes, and Swit transitioned once more, becoming a high school business teacher. For him, this was a way of giving back to the community, and instilling his passion for business on his students.

That passion still runs deep, and has traced his journey from the ice rinks of Thompson Area, to the forefront of a world-changing technology.

BE PART OF THE IVEY BUSINESS PLAN COMPETITION

Students from across Canada, the U.S., and beyond will compete for more than \$40,000 in prizes at the Ivey Business Plan Competition Weekend on January 24-25, 2020. You can be part of this exciting experience by joining our excellent judging panel for the competition. For more information visit go.ivey.ca/iveybpc or email us at iveyentre@ivey.ca





AMY NI, MBA '19 CONNECTING WESTERN TALENT WITH GLOBAL MARKETS

Having worked around the world for two of the Big Four Accounting firms (PwC and KPMG), Amy Ni, MBA '19, had decided to go out on her own prior to starting her MBA at the Ivey Business School.

For Ni, the one-year long MBA program was a time for personal growth, but also an opportunity to test the viability of her own start-up idea.

Together with a group of computer science experts from her time at Tulane University, New Orleans, Louisiana and Western University, Si-Han Education Technology Inc. was incorporated on February 22, 2019 in Ontario, with the help of Ivey Lecturer Philip King, MBA '89.

While the start-up was coming together, the first step on her entrepreneurial journey began the day she rejected a job offer from Deloitte US.

"That's when I thought, I should do this," said Ni.

Talent Management with Artificial Intelligence

Using a software as a service (SaaS) distribution model, the four co-founders, along with Ivey Professor Robert Austin, and the former Executive Director of Ivey's Career Management and Corporate Recruiting Team, Sharon Irwin-Foulon, Si-Han's mission is to provide talent management business solutions for enterprises.

A few months in, the company is already post-revenue, and Ni is targeting \$100,000 in revenue within their first year in business.

For years, artificial intelligence has played a major role in sifting through job applications. Si-Han goes beyond the basic process of keyword searches, and seeks to solve three major problems in how to attract, recruit and retain top talent.

Firstly, the Resume Check, uses Natural Language Processing (NLP) and Machine Learning (ML) to identify the right candidates for a particular position, by understanding the content of applicants' resumes; all within 30 seconds. The system then ranks each of the applicants as a percentage, with those with the highest grades receiving an automated video interview invite.

This aspect of the software has actually been opened up as a free service for students at Western University.

The second process is the Interview Check, which rates the scheduled video interviews of the top applicants through a number of structural interview question banks. At the end of the Interview Check, the software recommends a final list of candidates for in-person interviews.

Si-Han has also constructed a Talent Check function, which is specifically designed to help companies retain talent at both mid-level and junior-level. The Talent Check leverages big data, and portraits key staff members by interpreting data like

competency, teamwork and leadership. The software then provides a customized talent retention plan.

As for C-suite level retention, Ni notes that there are too many variables required to provide adequate solutions, currently.

Finding a unique target market

For Ni and her co-founders, the secret sauce lies in their target market; overseas companies looking for high quality talent from the U.S. and Canada.

Ni breaks down the current struggles for major Chinese companies, who must first approach the local government with their hiring needs. The local government then goes through a Chinese agent, who connects with a Canadian agent, who in turn touches base with a university or student club to present the job opportunity.

With Si-Han, a Chinese company can, with one click, forward a job opportunity to multiple job sites, and multiple university career management centres.

Just recently, Ni spoke to government officials from the province of Ningbo, China, who were visiting Toronto to attract Canadian talent. Due to budgetary limitations, and a lack of knowledge of other prospective talent pools, their search was limited to the University of Toronto.

Si-Han is currently available in both Mandarin and English.

The software's attractiveness was further validated at a business plan competition in Shenzhen, China, where it took second-place in the Industry category. The product left such an impression that Ni, and the team, were invited back to meet Shenzhen government officials.

As they prepare to expand their potential client base, Ni and the team are busy building up an overseas talent database, with graduate, and undergraduate profiles. For Ni, the Canadian market is a perfect testing ground for their software, thanks to its manageable size, and affluence of educated, and qualified candidates.

Future Plans

Si-Han is currently at Pre-Series A funding, and Ni is eager to finish the funding stage within the next six-months.

In order to do this, Ni is hoping to launch the 2nd version of the software, while also increasing the use of their individual product offerings, such as the Resume Check.

She is also looking to grow local seed clients, and get feedback on the new functions for the upcoming version.

With the whole team reunited and hard at work in Toronto, Ni is excited to see where her new career path may lead.

INTRODUCING

JANICE BYRNE,

ASSISTANT PROFESSOR, ENTREPRENEURSHIP



Janice Byrne is originally from Dublin, Ireland, and comes to Ivey from IESEG School of Management in Paris, France, where she was an associate professor of Human Resource Management and Organizational Behaviour. Her research focuses on gender and entrepreneurship/family business. From 2014 to 2018, she was academic director of Led By HER, an entrepreneurship education and training program for women who have experienced domestic and sexual violence.

What is the most important thing business executives can learn from your research?

My research lends deep insights into the insidious ways in which gender permeates and patterns entrepreneurship and family businesses. We have to look

beyond comparing men and women entrepreneurs, or men and women family business members. Gender extends beyond sex differences – jobs, expectations, business cultures, and processes (such as CEO succession) can all be gendered. Daily patterns are set in

place that disadvantage people, that we are not always aware of.

My research on succession in family business looks at how key family business actors' daily practices and interactions are all patterned by gender. We do "gender" in order to align with others (as well as our own) expectations. Whether we "do gender" well (or not) has repercussions for who is considered as a legitimate successor. Gender norms shape the alliances and networks one forms in family business, as well as the access to opportunities for potential successors. Gender norms also pattern expectations about dedication and involvement in the family business – sons who are "involved fathers" and who spend time on family obligations or who adopt a collaborative managerial approach may not be considered "man enough" for the successor role.

What led you to your career?

A passion for learning, helping, and communicating with others.

What is the most played song on your playlist as of now?

Everything now by Arcade Fire.

I also recently watched the Freddy Mercury film and it has me once more in awe of Queen and the sheer beauty of *Under Pressure*.

What book would you recommend to others? Why?

We should all be feminists by Chimamanda Ngozi Adichie. Because we should all be feminists.

Find out more about Dr. Byrne at go.ivey.ca/jbyrne



IVEY ENTREPRENEUR PODCAST WITH MATT PHILLIPS, QS '11 OF PHILLIPS BREWING AND MALTING CO.

"It all began with a 27-year old brewer, a windowless apartment, and a mountain of credit card debt."

Matt Phillips is the founder and CEO of Phillips Brewing and Malting Co. in Victoria, British Columbia. After years of working for other brewers, Matt decided to start up his own brand as craft brewers across the industry were shutting shop in the early 2000s. Almost two decades later, Phillips is not only still standing, but thriving as BC's Biggest Little Brewery.



DISCOVER

Matt's amazing journey and lessons learnt with Eric Morse in the first episode of our High Growth Series at go.ivey.ca/phillipsbeer

For more episodes of the Ivey Entrepreneur Podcast, visit go.ivey.ca/entrepodcast