

Technology's Next Generation

Macao Polytechnic Institute is teaching computer science with a specialization in gaming—a unique course of study born of a unique collaboration with the industry

The first graduates with a specialization in gaming technology will be leaving Macao Polytechnic Institute this summer to take their places among the industry innovators of tomorrow.

This is a pretty big deal, considering the impact these young minds are likely to have on the technologies that are defining and redefining how casinos operate, how they're regulated and the scope of the customer experience they offer, and not just in Macau, but worldwide.

"It will train students to exploit the benefits communication standards offer, creating new market-specific products and services never seen before," says Dr. Rita Tse, associate professor and coordinator of MPI's Computing Program.

The technology of communication is really what the specialization is all about, and the Gaming Standards Association has been one of its principal architects.

"We realized we have to educate because there is a shortage of talent in technology," says GSA President Peter DeRaedt.

GSA, of course, has been the driving force behind development and adoption of the open standards embodied in the Game-to-System protocol—G2S, as it's famously known—which is considered integral to the industry's networked future. It provides a language for gaming machines and host systems to talk to each other. Indeed, it has revolutionized the conversation, enabling software downloads, remote configuration and

remote software verification, tools which a few short years ago did not exist.

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– GSA President Peter DeRaedt

It was with a view to participating in the cultivation of a generation of programmers and networking specialists versed in the manifold benefits of open standards and inspired by its possibilities that GSA eagerly joined with Macao Polytechnic Institute and its faculty in the planning of the specialization back in 2007 and the shepherding of it into the classroom two years later.

"It was the GSA standard that really stimulated us and gave us the idea for it," Dr. Tse says. "That was very exciting for us."

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A close and collaborative relationship with the industry has been part of what makes Macao Polytechnic Institute special. The first fruits of this were harvested back in 2007 with the establishment of the Gaming and Entertainment Information Technology Research and Development Centre, founded with the support of the Melco Group. It has provided students with an array of skills in game development and MICE-related prototypes and products, including some fascinating virtual modeling concepts.

The Institute also is home to a gaming laboratory developed in partnership with



Macao Polytechnic Institute's gaming specialization, part of the school's bachelor's program in Computing Science, was developed in partnership with the Gaming Standards Association and IGT.

BMM Compliance to provide testing and certification services, training for local technicians and assistance with the ongoing development of Macau-specific gaming standards.

Not surprisingly, some 40% of the graduates of MPI's four-year degree program have gone on to jobs in gaming and related industries, another 13% in hospitality and tourism.

Having grown up in the shadow of some of the largest and most successful casinos in the world, MPI was equipped with a rich context for developing a course of study capable of providing a "bridge," as the Institute thinks of it, between today's slot floors and tomorrow's advancements in information technology—especially as these apply to the practical and the tactical: to data analysis, for instance, and database marketing and customer relationship management, all of which, of course, are continually evolving as well.

First, though, students need a foundation in management information systems and their applications. Gaming is actually one of two specializations built onto the Bachelor of Science in Computing degree. "Enterprise Information Systems" is the other. Both provide that grounding—in mathematics, computer systems and networking, data management, information systems planning, design and control—what the Institute considers "good fundamental computing concepts" and "sound intellectual and practical skills".

What is expected of the program's aspiring "Computer Specialists in Gaming Technology" is the ability to creatively apply this knowledge in their chosen fields. To get there they must complete a rigorous course of study, taught in English, in their third and fourth years, consisting of:

- Introduction to Gaming Technology
- Gaming Technology I and II
- Mathematics for Gaming Technology
- Multimedia Application Development
- Digital Image and Video Processing
- Computer Game Design and Development

In their fourth year students are required to solve practical problems or conduct supervised research in related topics.

As you can imagine, the career paths are numerous and wide: IT, banking, government and, of course, gaming



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operations and supply.

The latter is what drew the interest of International Game Technology, the US-based slots and systems giant that has been an avid supporter of open standards and readily joined with GSA to support the Institute and its students, donating equipment (including two of its state-of-the-art AVP slot machines), and providing advice and expertise and education and training for MPI faculty at its Reno, Nev., headquarters.

In acknowledgement of IGT's contribution, MPI President Lei Heong Lok presented the company with a certificate of appreciation last month at a ceremony held at the Institute, accompanied by a traditional exchange of gifts between Professor Lei and IGT's Mick Caban, who serves as pre-sales manager for Asia, based in Macau.

"We have gained a great deal of experience," Professor Lei said, addressing Mr Caban, "and with [IGT] joining us we expect even better results."

"What you're doing here is very good," Mr

Caban replied. "I have a passion for helping people better understand our business. For too long in this industry people have been doing things in the same ways because they were the ways it's always been done. This, hopefully, will open up new ways of looking at things and new ways of doing things."

It was GSA that introduced IGT to the Institute. IGT grasped the significance immediately. As Mr Caban said, "Systems now is no longer just about slots. It encompasses every part of casino and hotel operations—table games, marketing, auditing, finance, the cage. With the growth of systems in gaming, it's the IT people who are going to control the future."

In light of which, MPI stands uniquely positioned to influence how that future unfolds.

"GSA, they facilitated this; IGT, they supported it," acknowledges Dr. Tse, "and together we hope to bring the talent and technology to Macau. We want to make a contribution to the community. Our goal is to create innovators." ♠