Using Geckos to Teach Students About Embedded Design

**Situation:**

Maarten Weyn, a professor at the University of Antwerp, was inspired by the real-world challenges embedded developers were facing and set out to bring some of these real-world problems to his students. Combining academia and industrial innovation, Professor Weyn developed an approach to coursework that brings students face-to-face with real-world design problems and challenges them to build low-power IoT prototypes using sensors, actuators, and communication technologies while taking into account power consumption.

**Solution:**
Professor Weyn set out to find an MCU that was easy to learn, easy to use, and performed well. He evaluated platforms with an eye toward versatility for the classroom, but also with the understanding that he wanted something that was being used in the real-world as well. He chose the EFM32 Gecko family of MCUs and his lab is built around Gecko architecture. This gives him the opportunity to work directly in cooperation with companies so students have the perspective of bridging real-world application with what's being done in the classroom.

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Our learning curve with the Gecko was much shorter than others we had worked with. On top of that, it wasn’t difficult to port our existing APIs from other hardware platforms to the Gecko.

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Maarten Weyn | Professor at the University of Antwerp

Benefit:
The Gecko MCUs have a powerful core and innovative sleep modes to last long without compromising performance. The wide selection of peripherals and flexible energy management system make it ideal for battery operated applications like the ones Professor Weyn's students are designing. Additionally, the flexibility of the Gecko MCUs enables students to take their own development tools and make something unique.

Gecko Fundamentals:

- Low Active Power Consumption
- Reduced Processing Time
- Fast Wake-Up Time
- Autonomous Peripheral Operation
- Ultra-Low Standby Current