BRANDY CRUZ

From the Harvest to the Hub

How an environmental student who's happiest working with the earth managed to wrangle AI technology to serve ecological needs.

Story written by Mark Cox

Brandy Cruz came late to her chosen career – but she has been busy making up for lost time.

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The MSU Denver student – currently in the final year of an Environmental Science degree – had been working in the floral and wedding industry in Tennessee, until a move to Colorado prompted her to radically change gears.

"I was 28 years old and didn't know what I wanted to do," she recalled. "But once I heard about Environmental degrees for the first time, things quickly slotted into place and I went back to school."

Having grown up at the foothills of the Appalachian Mountains, Cruz had always loved the outdoors and nature, and she relished the idea of building a career in that world.

Food Justice

For most of the past three years, Cruz has complemented her degree studies with a seasonal working role that she loves. SustainEd Farms is a nonprofit organization that partners with schools to create farms and gardens on school campuses, teaching students about the value of sustainability and nutrition.

Cruz leads on sustainability and nutrition education programs for the organization at more than 40 Denver schools. "Once I came across SustainEd Farms and was introduced to the concept of food justice, I was hooked," she said.

But last year, fate – and MSU Denver – handed Cruz yet another opportunity.

"I was still figuring out where I might fit within the environmental field," she explained. "And as AI began to rapidly grow, I started thinking about how it might be used to support environmental work – especially in marginalized communities, where I typically focused my efforts."

Machine learning

Then the ideal opportunity fell in her lap. Cruz secured a student internship to help develop MSU Denver's recently launched Sustainability Hub— a website powered by machine learning that aims to support Coloradans seeking economic, environmental and social data.

The Hub has been funded by a $1.2 million research grant from the National Science Foundation (NSF). And Cruz's opportunity was itself made possible by the NSF ASCEND Engine, which supports students studying in priority areas centered on resiliency, sustainability and climate tech innovations. (Last November, she also attended the annual American Water Resources Association conference utilizing NSF ASCEND Engine grant funds.)

Cruz relished working on the Hub, which is designed to help Coloradans discover the mass of useful data and research that is publicly available but often hard to find. Her role was to create material for 'Bili' (derived from 'sustainability'), the artificial intelligence-powered chatbot at the heart of the system.

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The project's ultimate aim, she explained, is to build a user-friendly site that can answer queries from users in an informative and unbiased way. And while it's still early days for Bili – the Hub only went live this January – it is learning fast.

Strong work

While the internship was demanding, Cruz's hard work certainly made an impression. "Brandy did a wonderful job for us, reliably handling a wide range of responsibilities and consistently producing strong work," said Alyssa Williams, Project Manager for the Sustainability Hub.

"Her work on plain-language summaries and public-facing content – basically, putting together the building blocks of language for the AI chatbot – was really good, and she steadily improved over the course of her internship."

One key reason why Cruz wanted to work on the Hub project was that, while she recognized AI's potential and power as a tool, she'd also become increasingly aware of the pushback regarding its negative impacts.

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"Artificial Intelligence often gets a bad press, but I loved seeing how AI tools can be successfully used for us in the environmental world," Cruz said. "The Hub's Bili tool is a great asset on two fronts – it makes AI easy to use, while also promoting sustainability and environmental issues."

Future prospects

As Cruz nears the end of her college journey – she's a senior and due to finish in August – she feels positive about how things have panned out.

"Looking back, I can see how my degree-internship experience helped give me a clearer idea of where I want to be and how I want to contribute in the environmental field," she said.

"It also deepened my appreciation for AI as a tool—not as an end in itself, but to help bridge gaps, especially for communities with little to no direct access to policymakers."

Williams, meanwhile, has high hopes for her intern's future prospects. "Brandy showed clear growth in both her confidence and ability as the internship progressed," she said. "She took more initiative and navigated complex, unfamiliar tools while tackling difficult tasks – such as building a digital story around food deserts."

With a whole career still ahead of her, Cruz already has a clear vision regarding her future goals. First on the list: Gain more environmental experience by helping SustainEd Farms to promote sustainable gardening and nutrition at public schools, primarily situated in food deserts.

In a handful of years, however, she would love to transition into a career focussed more on restoration, conservation, soil or water quality issues. The reason why is simple: "I'm an outdoors person – and I just really enjoy being out in the field!"