Carve your niche with 'The Carpentries'.

Victor Koppejan is a PhD student in computational Bioprocess Engineering. His doctoral research involves the purification of proteins from biological matrices for industrial use using expanded bed adsorption. Koppejan employs open source computer simulation tools to model the dynamics of fluid and particle flow in a fluidized bed using the Dutch National Super Computer.

Raúl Ortiz Merino is a Postdoctoral researcher in Industrial Microbiology. He works within the field of comparative genomics to characterise microbial gene sequences of commercial relevance. After years spent training as a wet lab biochemist, Ortiz Merino made his transition to dry lab computational science and is now an experienced bioinformatician.

TU Delft Library met Data Champions from the Department of Biotechnology, Victor Koppejan and Raúl A. Ortiz Merino, to celebrate their Software and Data Carpentry workshop success

Both Data Champions have made a significant contribution to their local research community by sharing their knowledge and expertise during Software and Data Carpentry workshops

What are 'The Carpentries'?

The Carpentries are a non-profit project, formed in January 2018, to teach basic computing skills to researchers worldwide. The aim is to train and foster an active, inclusive and diverse community of learners and instructors that promotes efficient, open and reproducible computational research.

During two-day Carpentry workshops, instructors and helpers share their mission to teach foundational coding and data skills using openly-available lesson material and evidence-based teaching practices. Anyone can register to attend, no matter their skill level, and what's more, at TU Delft it's free to join!

Bringing The Carpentries to TU Delft

The 4TU.Centre for Research Data became a Gold Member of The Carpentries to bring instructor training and workshops to TU Delft. Since piloting Software Carpentry for the first time in November 2019, the university has hosted two Software Carpentry workshops. After helping in the first workshop, Koppejan decided to become a certified Carpentries instructor in February and successfully held his own Software Carpentry workshop in March this year! The most recent Software Carpentry workshop took place on 8-9th July.

Ortiz Merino has volunteered his help during all workshops at TU Delft and has conducted his own whilst undertaking his certified instructor training. To build upon the experience he gained during the Software Carpentries, Ortiz Merino was financially supported by The Data Champion travel fund to join the Introduction to Reproducible Genomics: Data Carpentry in Ghent (Belgium). He used this valuable experience to collaborate with fellow Bioinformatician and Data Champion, Marcel van den Broek, and organise the first TU Delft Data Carpentry workshop in June. You can read more about TU Delft's Data Carpentry workshop here.

Caption: Researchers attend TU Delft's first Genomics Carpentry to 'shape up' their data science skills!

Software or Data Carpentry? What's the difference?

Software Carpentry workshops are designed for researchers who want to learn how to programme more effectively. Typically, three core topics are taught; The Unix shell, version control with Git, and a programming language (Python or R).

Data Carpentry workshops are designed for researchers who are dealing with domain-specific data. The workshops are centred around a single dataset and teach participants project organisation and management, introduction to the command line, data wrangling and processing, and introduction to cloud computing for genomics.

Why invest in The Carpentries?

We heard why both Data Champions elect to use Carpentry workshops as a means of disseminating knowledge amongst a wider audience.

"I became inspired by open online training on high performance computing provided by Argonne National Laboratory (USA)," says Koppejan. "After undertaking online tutorials, I was enthusiastic to share the knowledge I'd gained with my colleagues but didn't have sufficient time to train them all on a one-to-one basis." He continues, "I believed that becoming a Carpentries instructor would help me spread the word of good code management amongst a larger research community."

Ortiz Merino shared similar motivations. His research section comprises 4 principal investigators, 4 postdoctoral researchers, 16 PhD students and 10 technicians, not to mention the constant flux of Masters and Bachelors degree students that can reach as many as 50 individuals. He also uses Carpentry workshops to reach more people. "Most members of my section encounter similar research problems I thought The Carpentries workshops would make it easier to gather together to answer queries, explain common concepts and learn as a group."

Carve your niche, be your own bioinformatician

Bench scientist turned computational biologist, Ortiz Merino, understands the challenges of moving from the wet to dry lab environment. "Nowadays, it's difficult for biologists to avoid computational approaches all together. Most modern scientists will have to learn computer programming at some point during their career." He reflects on his personal experience. "Making the switch is not easy. It took me several years to learn the specialist data science skills required to make my transition from experimental to computational biology. Working as an intermediary between the two spheres, I want to bring the wet and dry lab closer together and I believe Data Carpentry workshops can help me to achieve this."

The workshops introduce wet lab scientists to computational tools in an approachable way, bridging the gap between generating and analysing data. "Participants receive all of the basic information they need in a structured two-day workshop so that they can start learning how to become their own bioinformatician." Ortiz Merino assures that Data Carpentry workshops are the best way to learn.

Sculpt your Soft Skills

Aside teaching technical skills, The Carpentries teach soft skills that enhance personal and professional development. Koppejan explains how training to become a certified instructor aided in the development of his interpersonal skills. "The instructor training programme taught me how to communicate more effectively and interact harmoniously with workshop participants. I became more conscious of listening and teaching with empathy."

Koppejan emphasised the importance of creating an inclusive, interactive and collaborative learning environment. He recounted his positive experience of attending the Collaborations Workshop 2019 (CW19), an 'un-conference' that brought multidisciplinary personnel together to Loughborough University (UK), to explore best practices and the future of research software in a relaxed, social setting.

The rules of an 'un-conference' are simple:

#1. Whoever shows up are the right people.

#2. Whatever happens is fine.

#3. Whenever it starts is the right time.

#4. It's over when it's over.

And, not forgetting 'The Pac-Man Rule': When standing in a social circle, always leave enough space to encourage new people to join the group conversation!

We wish our Data Champions good luck in their bright future!

Koppejan's personal attributes, and the transferable skills he has developed during his time as a Data Champion and Carpentries instructor at TU Delft, have led to exciting career prospects. It's pleasing to hear that after expressing his interest in Open and FAIR data in a recent job interview, he has secured a position as a Data Scientist at DSM and will start his new role in October!

We send our grateful thanks and best wishes to Victor Koppejan as he enters the next chapter of his career, and also to Raúl Ortiz Merino as he becomes a certified Carpentries instructor at TU Delft.

Citation

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