

## Master's Degree in Data Science@UniPD

For inquiries: [internships.datascience@math.unipd.it](mailto:internships.datascience@math.unipd.it)

Fill the form here below for each available project and send it to us by email.

<b>Company name</b>	ID Ward
<b>Company description (short text)</b>	ID Ward is a data privacy startup based in London and Barcelona. We are creating a more private and secure web by using machine learning for data anonymisation. Digital marketing requires companies to collect data about their users and combine it with other data to identify the individual, understand their preference and deliver targeted advertising. But with the development of privacy regulations around the world, this trade in personal data is no longer lawful. ID Ward allows marketers to find consumers in a privacy-friendly way, by storing all personal data on the device and anonymising it with machine learning.
<b>Company Website</b>	<a href="https://id-ward.com">https://id-ward.com</a>
<b>Address</b>	Ingenuity Centre, Triumph Road, Nottingham, UK Paseo de Gracia 101, Barcelona, Spain
<b>Company contact</b> (mandatory, name and email)	Mattia Fosci: <a href="mailto:mattia@id-ward.com">mattia@id-ward.com</a> Danail Krzhalovski: <a href="mailto:danail@id-ward.com">danail@id-ward.com</a>
<b>University contact</b> (if any, name and email)	
<b>Type of internship</b>	Full-time, paid
<b>Brief description of activities</b>	We are looking for ambitious, confident and curious data scientists to work with us. You will be part of a young team of developers pushing the boundaries of innovation in data science. At the moment, we have three internship projects available and you will have to choose one. In your



	<p>application, please indicate your favourite project and your second favourite.</p> <p>We expect the internships to start between January and early March, and to last 6 months. The internship project can also be used in your dissertation, and we will support you taking some time off at the end of the project to write up the results. We offer a reimbursement of €800 per month, and we will expect you to work full time (except for time allowed spent writing the dissertation).</p> <p>The ML team will be based in Barcelona. We would like you spend at least part of your internship with us in Barcelona, but if you can only work remotely that is also fine and it will not affect your application.</p>
<p><b>Required skills</b></p>	<p>Topic 1: NLP - Multilingual Taxonomic Text Classification</p> <ul style="list-style-type: none"> <li>• Expand an already existing taxonomic text classification model to a general language independent use-case.</li> <li>• Experiment with state of the art models like BERT and multilingual embedding techniques such as MUSE, doing a comparative analysis on performance, inference speed and memory consumption.</li> <li>• Possibly improve the current automated data collection process to include relevant web articles for the taxonomy.</li> </ul> <p>Topic 2: Recommendation Systems for Federated Learning</p> <ul style="list-style-type: none"> <li>• Expand an already existing on-device recommendation system using feature selection and engineering on user clickstream data.</li> <li>• Compare different rec-sys architectures (MultVAE, CFGAN, ADMM) to get the best trade-off between performance and efficiency.</li> <li>• Researching and implementing methods for training the selected model on the edge.</li> </ul>

	<p>Topic 3: Homomorphic Encryption for Machine Learning</p> <ul style="list-style-type: none"> <li>• Research on the topic of homomorphic encryption to build privacy preserving machine learning models</li> <li>• Practically applying novel breakthroughs in the area such as the CKKS encryption scheme during the training of the models.</li> <li>• Analyze space and time complexity of doing computations with the scheme on the encrypted data.</li> </ul>
<p><b>Languages (writing/speaking)</b></p>	<p>English</p>
<p><b>Starting date/period (if any) and expected duration (mandatory)</b></p>	<p>Starting between mid-January and mid-March 2022 Expected duration: 6 months (extendable)</p>
<p><b>Available positions</b></p>	<p>Max three positions, one per project (see above)</p>
<p><b>Support (e.g., food, reimbursement of expenses, salary, etc.)</b></p>	<p>Reimbursement of €800 per month</p>