



LOGOBJECT

Dr. Jérémy Decerle
LogObject AG
Thurgauerstrasse 101a
8152 Opfikon
Switzerland
jeremy.decerle@logobject.ch
+41 44 575 17 33

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Letter of recommendation

Dear DIZH commission,

I am writing this recommendation letter to profoundly support the application of Luca Persia for the DIZH Junior Fellowship 2026. Luca played a fundamental role in our collaborative project with the Zurich University of Applied Science (ZHAW) and the University of Zurich (UZH), supported by Innosuisse, titled "*Quantifying Illegal Activity: Estimating Dark Rates and Predicting Offenses*" (102.134 IP-ICT). This research aimed to estimate the number of undetected cyber-attacks and predict high-risk areas for burglaries in Switzerland. Luca's contributions were pivotal, particularly in burglary prediction, where his expertise significantly enhanced our ability to identify and forecast these high-risk zones.

Key Contributions and Innovation

Luca was responsible for developing and implementing advanced statistical and machine learning algorithms to estimate undetected illegal activities. His application of ensemble models to real-world data, specifically for predicting high-risk burglary areas in the cantons of St. Gallen and Zug, demonstrated his technical sophistication. The methodologies he employed were not only innovative but also adaptable, with plans to extend his work to the city of Zurich. His deep understanding of predictive modelling and statistical techniques ensured that our predictions were both accurate and actionable.

Software Pipeline Development

One of Luca's most impressive accomplishments was his ability to translate complex theoretical models into a highly functional and efficient software pipeline. His development skills allowed us to bridge advanced analytics with real-world police operations into our existing data infrastructure. The pipeline he developed had the precision of a well-crafted software package,

with built-in flexibility to accommodate future modifications and enhancements. His work enabled the models to run smoothly, ensuring that law enforcement agencies could rely on them for real-time insights into high-risk burglary areas. Luca's meticulous attention to detail in coding and his innovative approach to system design were key to the project's operational success.

Collaboration and Teamwork

Luca's collaborative nature and proactive communication were instrumental throughout the project. He worked closely with team members and partners at UZH and ZHAW, ensuring that data-related challenges were swiftly addressed and that we met critical project milestones. His ability to explain complex technical concepts in a clear and approachable way fostered a highly productive working environment, making him an indispensable asset to the team.

Potential for Future Success

Having graduated with a PhD in computer science myself, I recognize in Luca the qualities that are fundamental to thriving as a researcher—intellectual curiosity, analytical precision, and the ability to tackle complex challenges with both creativity and rigor. His ability to bridge theoretical research and practical application sets him apart, and I am confident that these qualities will serve him well in his pursuit of the DIZH Junior Fellowship. Luca's drive to push the boundaries of predictive modelling and his collaborative mindset make him an excellent candidate for the fellowship, and I have no doubt that he will continue to make impactful contributions to his field.

I am confident that Luca will bring the same level of dedication, analytical expertise, and collaborative mindset to any future projects he undertakes. He has my strongest endorsement for the DIZH Junior Fellowship, and I am excited to see the contributions he will continue to make in his research career. Please feel free to contact me for any further information.

Sincerely,

Dr. Jérémy Decerle

