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Motivation Letter

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Dear DARA Fellowship Committee, I am applying for the DARA Fellowship to pursue a PhD in graph representation learning for biomedical data. I am excited about this opportunity to return to research and start a PhD, building on my background in data science, applied mathematics, and machine learning.

For my university degree, I studied Engineering Physics at KTH, where I specialised in statistical learning and data analytics and graduated with a perfect GPA of 5.0/5.0. My Master's thesis focused on probabilistic modelling and computer vision for radiotherapy planning, integrating diverse clinical data sources into predictive models. Working closely with oncologists showed me how ML can be technically deep while making a clear impact in a clinical setting.

I have always been an ambitious student, representing Sweden in the International Young Physicists' Tournament and later joining two university exchanges. During my bachelor's I took part in a research stay at Zhejiang University, and during my master's I spent a semester at ETH Zürich. These experiences gave me early exposure to international research environments and strengthened my interest in combining mathematical rigour with practical applications.

Since graduating, I have spent six years working as a data scientist. At Signum Life Science, I lead development of ML products for pharmaceutical clients, including a next-best-action engine and a price forecasting system. These projects have been rewarding, but they also made me miss research, the space to explore new ideas in depth and contribute to fundamental progress rather than immediate business outcomes.

The proposed PhD project, *Graph Representation Learning for Clinical Knowledge Graphs*, represents an exciting next step for me. It combines the technical challenge of designing scalable, interpretable graph models with the practical importance of fusing diverse biomedical data from knowledge graphs that can support discovery and decision-making. Copenhagen offers a uniquely strong setting for this work, with its vibrant ecosystem in computational biology and precision medicine supported by the Novo Nordisk Foundation.

I am also drawn to the DARA community itself. The networking events and cross-disciplinary workshops sound genuinely enjoyable, and I see them as a chance to exchange ideas with talented peers across fields. I look forward to contributing actively to that environment.

In short: I have a strong mathematical background, a perfect academic record, and real-world experience developing ML systems in pharma and healthcare. I am eager to take on the PhD project on Graph Representation Learning for clinical knowledge graphs. The DARA Fellowship offers a unique chance to pursue research that matters, while also connecting with a broader network through the DARA community.

Sincerely, Ivar Cashin Eriksson