Caleb Schultz Kisby

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Position: AI Research Intern – Neuro-Symbolic AI for Decision Support

Dear Bosch hiring manager,

Hi, I'm Caleb, a 5th year PhD candidate at Indiana University doing research in neuro-symbolic AI. I'm excited to recently discover that Bosch has an opening for a Neuro-Symbolic AI Research Intern. This seems like a perfect fit, and so I'm here to apply.

I have experience with both neuro-symbolic theory, as well as with actually implementing hybrid neuro-symbolic systems. I definitely meet the preferred qualifications in your posting:

- **Symbolic AI:** I have a particularly strong background in formal logic (first-order, as well as modal, temporal, and description logics). In fact, I've spent much of my PhD proving soundness and completness for a natural language-inspired logic and a formal neuro-symbolic translation.
- **Deep Learning:** I have implemented custom neural network architectures using both Tensorflow and Scikit-Learn (not PyTorch, unfortunately, but the basics are the same!). Every neural network I've designed incorporates symbolic reasoning in some way (see the Projects listed on my resume).
- **Knowledge Graphs & Querying:** Knowledge graphs are ubiquitous in the papers I read, and so I'm familiar by osmosis. I can also write basic PostgreSQL queries.
- **Sensor-Based Data:** I worked with LIDAR sensor data for my undergraduate senior project. In fact, I was in charge of writing the code to fit curves to the LIDAR data.
- **Natural Language:** I have used Python's NLTK (Natural Language Toolkit) in my graduate coursework. I am familiar with both classical (compositional) and distributional (vector) semantics for natural language processing.

If you are interested, I'm available for a phone or Zoom interview during normal business hours (8am–6pm, EST) — Please email me at the address above to schedule a time. I'm looking forward to hearing more about the project!

Thank you for your consideration,

Caleb Schultz Kisby