Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
Benjamin proposes to develop a full spectrum programming language to address practical and theoretical concerns with software development. The idea is interesting, but the actual means to achieving such a lanaguage and how much it would differ from some existing language is left hazy. Benjamin seems well versed in the background of the research area and should be capable of making progress as a PhD student.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Very Good

Explanation to Applicant
The proposed programming language, if successful, would have benefits both for computer science education and for practical implementation projects in industry, etc. How a new programming language is applied to an existing code base (e.g., the Swedish pension system) is a bit unclear.

Summary Comments
Benjamin's academic performance at Cornell is a bit weak. He has multiple research experiences and one conference publication. His letters of support are quite positive. He clearly has talent as a teacher. Benjamin should be able to make significant contributions to the field of programming languages.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
The applicant has an average academic record, however the record does indeed improve towards the end of his undergraduate career. A lead paper at the top-tier PLDI'14 conference is an exceptional achievement in a short time as a graduate student. The applicant proposes a full spectrum programming language for accommodating wide degrees of safety. The main concern is that it is not clear how the proposed theoretical and implementation framework will work. The applicant could added more content on these aspects of the proposal.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Good

Explanation to Applicant
The applicant uses two real examples to motivate the broader impacts of his proposal. The swedish pension system and a DARPA project are used as a case study to motivate the need for combining programming languages.

Summary Comments

The applicant has average academic background but his preparation to conduct the proposed research is well founded with great prior publication record.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
The proposed work is of enormous potential as it falls in the ara of programming languages. The applicant supports his work with a good observation on software developements for large applications and used by large enterprises. He shows an ability to grasp intelectually challenged problems. However, his rough and relatively late introduction to research at Cornell affected his academc performance. His potential success is well documented by the written comments in his reference letters.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Good

Explanation to Applicant
An unwanted effect in the organization of the application is the apparent lack of information on the past experiences of the applicant. Teaching at Albany, volunteering at the local Boys and Girls club, writing and using a tutorial on Lego Mindstorms robots, and finally as a TA at Ithaca, is information to be highlighted as it shows an individual naturally committed to help others. His research is motivated by the impact of its application. He cites a couple of examples from his past experience. Details are missing about future outreach activities.

Summary Comments
This application shows a bright applicant very much intrigued by the intricacies found in an optimal development of applicaitons, enough to be motivatied to a high-level language approach that he refers as a "a full spectrum programming language. His outreach experiences are hidden in the application, which reads a bit desorganized; this might be the reason why future outreach activity linking his work is not detailed.