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Recommendation for Han-ku Lee

Dear Colleague,

As a research scientist and project leader at Northeast Parallel Architecture Center, I have directly supervised Han-Ku Lee in activities related to our research group since June 1998. He has worked as Graduate Resarch Assistant in the group since he became a Ph.D. student in January 1999. He has been very closely involved with the development of the *HPJava* translator. This translator is a principle component of the work on our *HPspmd* programming model—work funded by a 3-year NSF grant that will transfer to Florida State University in the near future.

When he first joined our group Han-Ku Lee worked closely with Dr Guansong Zhang on the front-end for the HPJava translator. This is based on the JavaCC parser-generator tool from JavaSoft. With no previous background in this area, and working as an independent study student, Han-Ku quickly learnt the principles of compiler front-end design and contributed several vital components to the parsing and AST generation modules.

After Dr Zhang left to work at IBM, Han-Ku worked with me and one other graduate student to complete development of the front-end and translation modules. One focus of Han-ku's work at this stage was on semantic checking. He developed from scratch a type-checking module for our extended Java language. This incorporates a full type-checker for the base language, taking account of the interplay between overloading, inheritance relations and promotions—fundamental in object-oriented programming. The type analysis is extended to incorporate the multidimensional distributed arrays of HPJava.

More recently Han-Ku has worked on completing the Java interface to an existing run-time library for data-parallel languages, developed at NPAC in earlier HPF-based projects. Han-ku is now our main expert on the Java Native Interface (JNI) interface to the *Adlib* run-time library. Additionally he has been gradually taking over the maintenance and development of the translation module of the HPJava compiler, and has been maintaining the test suite for the system, which drives further development. Recently he has been working on testing the complete system.

After eighteen months working on the HPJava project (since before it was formally funded by NSF) Han-Ku has become the main implementor and maintainer of the system. I believe his continued contribution is almost essential for its successful completion.

Han-Ku has also actively participated in a study group I have been running with several students, in which we have been studying more general material related to compilers for parallel computers. Han-ku has led a many of these sessions.

Han-ku is very enthusastic, highly talented, and a valuable researcher, who has a critical role in the ongoing HPJava project.

Yours sincerely,

Bryan Carpenter