

pointer:0x7f0af1c72010

SgSourceFile

root node

SgNode\* p\_parent : 0x224d350

bool p\_isModified : 0

bool p\_containsTransformation : 0

\$CLASSNAME\* p\_freepointer : 0xffffffffffff

Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af1e25068

SgStringList p\_originalCommandLineArgumentList : [pdfGenerator, -std=c++11, -c, autoKernel.cpp]

int p\_verbose : 0

bool p\_output\_warnings : 0

bool p\_C\_only : 0

bool p\_UPC\_only : 0

bool p\_UPCxx\_only : 0

int p\_upc\_threads : 0

bool p\_C89\_only : 0

bool p\_C89\_gnu\_only : 0

bool p\_C99\_only : 0

bool p\_C99\_gnu\_only : 0

bool p\_Cxx\_only : 1

bool p\_C11\_only : 0

bool p\_C11\_gnu\_only : 0

bool p\_Cxx0x\_only : 0

bool p\_Cxx11\_only : 1

bool p\_Cxx11\_gnu\_only : 0

bool p\_C14\_only : 0

bool p\_C14\_gnu\_only : 0

bool p\_Cxx14\_only : 0

bool p\_Cxx14\_gnu\_only : 0

bool p\_Fortran\_only : 0

bool p\_F77\_only : 0

bool p\_F90\_only : 0

bool p\_F95\_only : 0

bool p\_F2003\_only : 0

bool p\_F2008\_only : 0

bool p\_CoArrayFortran\_only : 0

bool p\_Java\_only : 0

bool p\_X10\_only : 0

bool p\_PHP\_only : 0

bool p\_Python\_only : 0

bool p\_Cuda\_only : 0

bool p\_OpenCL\_only : 0

bool p\_requires\_C\_preprocessor : 0

bool p\_binary\_only : 0

SgFile::outputFormatOption\_enum p\_inputFormat : 2

SgFile::outputFormatOption\_enum p\_outputFormat : 2

SgFile::outputFormatOption\_enum p\_backendCompileFormat : 2

bool p\_fortran\_implicit\_none : 0

bool p\_openmp : 0

bool p\_openmp\_parse\_only : 1

bool p\_openmp\_ast\_only : 0

bool p\_openmp\_lowering : 0

bool p\_cray\_pointer\_support : 0

bool p\_failsafe : 0

bool p\_output\_parser\_actions : 0

bool p\_exit\_after\_parser : 0

bool p\_skip\_syntax\_check : 0

bool p\_relax\_syntax\_check : 0

bool p\_skip\_translation\_from\_edg\_ast\_to\_rose\_ast : 0

bool p\_skip\_transformation : 0

bool p\_skip\_unparse : 0

bool p\_skipfinalCompileStep : 0

bool p\_unparse\_includes : 0

bool p\_unparse\_line\_directives : 0

bool p\_unparse\_function\_calls\_using\_operator\_syntax : 0

pointer:0x7f0af1da0120  
SgGlobal  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af1c72010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af1e250c0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af1e25118  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55140  
SgTypeTable\* p\_type\_table : 0x2287d98  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgDeclarationStatementPtrList p\_declarations : <too long>: <too long>: [0x7f0af1ac7010, 0x7f0af1ac72b0, 0x7f0af15f8010, 0x7f0af15f83e0, ...]

pointer:0x7f0af054b440  
SgTemplateFunctionDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 1:1  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L3R\_\_L4R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af1da0120  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831888  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831150  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0af054b440  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af054b010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : forall  
SgFunctionParameterList\* p\_parameterList : 0x7f0af0d93860  
SgFunctionModifier p\_functionModifier : <too long>: <too long>: SgFunctionModifier(isUnknown() = false isDefault() = true isInline()  
SgSpecialFunctionModifier p\_specialFunctionModifier : <too long>: <too long>: SgSpecialFunctionModifier(isUnknown() = false isDefault()  
SgTypePtrList p\_exceptionSpecification : []  
bool p\_named\_in\_end\_statement : 0  
std::string p\_asm\_name :  
SgExprListExp\* p\_decoratorList : 0  
SgFunctionType\* p\_type : 0x7f0af17ec470  
SgFunctionDefinition\* p\_definition : 0x7f0af042d010  
bool p\_oldStyleDefinition : 0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresNameQualificationOnReturnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
SgDeclarationStatement::gnu\_extension\_visability\_attribute\_enum p\_gnu\_extension\_visability : 1  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
int p\_name\_qualification\_length\_for\_return\_type : 0  
bool p\_type\_elaboration\_required\_for\_return\_type : 0  
bool p\_global\_qualification\_required\_for\_return\_type : 0  
bool p\_prototypelsWithoutParameters : 0  
int p\_gnu\_regparm\_attribute : -1  
SgFunctionType\* p\_type\_syntax : 0  
bool p\_type\_syntax\_is\_available : 0  
bool p\_using\_C11\_Noreturn\_keyword : 0  
bool p\_is\_constexpr : 0  
bool p\_using\_new\_function\_return\_type\_syntax : 0  
SgFunctionParameterScope\* p\_functionParameterScope : 0  
bool p\_marked\_as\_edg\_normalization : 0  
SgTemplateParameterPtrList p\_templateParameters : [0x7f0af078a010]  
SgTemplateArgumentPtrList p\_templateSpecializationArguments : []  
SgName p\_string : <too long>: <too long>: template < typename LOOP\_BODY > void forall ( LOOP\_BODY loop\_body )  
bool p\_string\_represents\_function\_body : 0

pointer:0x7f0af0d93860  
SgFunctionParameterList  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 2:1  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L4R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af054b440  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08315c8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831620  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0d93860  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_args : [0x7f0af09206e8]

pointer:0x7f0af09206e8  
SgInitializedName  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 2:24  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af0d93860  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08313b8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831410  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : loop\_body  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af07b9010  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0af054b440  
SgStorageModifier\* p\_storageModifier : 0x2ecd5c8  
SgScopeStatement\* p\_scope : 0x7f0af042d010  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 0  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0af042d010  
SgTemplateFunctionDefinition  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 3:1  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af054b440  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831468  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08314c0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d554d0  
SgTypeTable\* p\_type\_table : 0x2287e10  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgBasicBlock\* p\_body : 0x7f0af04c2010  
std::map<SgNode\*,int> p\_scope\_number\_list : []

pointer:0x7f0af04c2010  
SgBasicBlock  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 3:1  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af042d010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831308  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831360  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d553a0  
SgTypeTable\* p\_type\_table : 0x2287de8  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgStatementPtrList p\_statements : [0x7f0af032e010]  
std::string p\_asm\_function\_body :

pointer:0x7f0af032e010  
SgExprStatement  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af04c2010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831a98  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831af0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgExpression\* p\_expression : 0x7f0af035d010



pointer:0x7f0af035d010  
SgFunctionCallExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:13  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: UNKNOWN

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af032e010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08319e8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831a40  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af0831570  
SgExpression\* p\_function : 0x7f0af03fa010  
SgExprListExp\* p\_args : 0x7f0af0394010  
SgType\* p\_expression\_type : 0x7f0af07b9010  
bool p\_uses\_operator\_syntax : 0

pointer:0x7f0af03fa010  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: LOOP\_BODY

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af035d010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08316d0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831728  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af0831518  
SgVariableSymbol\* p\_symbol : 0x2f62570  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af0394010  
SgExprListExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: int

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af035d010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08318e0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831938  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af08317d8  
SgExpressionPtrList p\_expressions : [0x7f0af03c7010]

pointer:0x7f0af03c7010  
SgIntVal  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:14  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: int

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af0394010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831780  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831678  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af0831830  
SgExpression\* p\_originalExpressionTree : 0  
int p\_value : 0  
std::string p\_valueString : 0

pointer:0x7f0aeff19010  
SgTemplateInstantiationFunctionDecl  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L5R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af1da0120  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831db0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831d58  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 0  
bool p\_forward : 1  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0aeff19430  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aeff19010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : forall < >  
SgFunctionParameterList\* p\_parameterList : 0x7f0af0d93ab0  
SgFunctionModifier p\_functionModifier : <too long>: <too long>: SgFunctionModifier(isUnknown() = false isDefault() = true isInline()  
SgSpecialFunctionModifier p\_specialFunctionModifier : <too long>: <too long>: SgSpecialFunctionModifier(isUnknown() = false isDefault()  
SgTypePtrList p\_exceptionSpecification : []  
bool p\_named\_in\_end\_statement : 0  
std::string p\_asm\_name :  
SgExprListExp\* p\_decoratorList : 0  
SgFunctionType\* p\_type : 0x7f0af17ec500  
SgFunctionDefinition\* p\_definition : 0  
bool p\_oldStyleDefinition : 0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresNameQualificationOnReturnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
SgDeclarationStatement::gnu\_extension\_visability\_attribute\_enum p\_gnu\_extension\_visability : 1  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
int p\_name\_qualification\_length\_for\_return\_type : 0  
bool p\_type\_elaboration\_required\_for\_return\_type : 0  
bool p\_global\_qualification\_required\_for\_return\_type : 0  
bool p\_prototypelsWithoutParameters : 0  
int p\_gnu\_regparm\_attribute : -1  
SgFunctionType\* p\_type\_syntax : 0x7f0af17ec500  
bool p\_type\_syntax\_is\_available : 1  
bool p\_using\_C11\_Noreturn\_keyword : 0  
bool p\_is\_constexpr : 0  
bool p\_using\_new\_function\_return\_type\_syntax : 0  
SgFunctionParameterScope\* p\_functionParameterScope : 0  
bool p\_marked\_as\_edg\_normalization : 0  
SgName p\_templateName : forall  
SgTemplateFunctionDeclaration\* p\_templateDeclaration : 0x7f0af054b010  
SgTemplateArgumentPtrList p\_templateArguments : [0x7f0af0757078]  
bool p\_nameResetFromMangledForm : 1  
bool p\_nameResetFromMangledForm : 1

pointer:0x7f0af0d93ab0  
SgFunctionParameterList  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L6R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aeff19010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831b48  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831ba0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0d93ab0  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_args : [0x7f0af0920830]

pointer:0x7f0af0920830  
SgInitializedName  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af0d93ab0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831ca8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831d00  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : loop\_body  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af011d010  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aeff19010  
SgStorageModifier\* p\_storageModifier : 0x2ecd5f0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 0  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0af0c439e0  
SgFunctionDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 7:1  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: main\_0x7f0af0c439e0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af1da0120  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831e60  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831e08  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0af0c439e0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0c43610  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : main  
SgFunctionParameterList\* p\_parameterList : 0x7f0af0d93f50  
SgFunctionModifier p\_functionModifier : <too long>: <too long>: SgFunctionModifier(isUnknown() = false isDefault() = true isInline()  
SgSpecialFunctionModifier p\_specialFunctionModifier : <too long>: <too long>: SgSpecialFunctionModifier(isUnknown() = false isDefault()  
SgTypePtrList p\_exceptionSpecification : []  
bool p\_named\_in\_end\_statement : 0  
std::string p\_asm\_name :  
SgExprListExp\* p\_decoratorList : 0  
SgFunctionType\* p\_type : 0x7f0af17d51c0  
SgFunctionDefinition\* p\_definition : 0x7f0aefe84010  
bool p\_oldStyleDefinition : 0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresNameQualificationOnReturnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
SgDeclarationStatement::gnu\_extension\_visability\_attribute\_enum p\_gnu\_extension\_visability : 1  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
int p\_name\_qualification\_length\_for\_return\_type : 0  
bool p\_type\_elaboration\_required\_for\_return\_type : 0  
bool p\_global\_qualification\_required\_for\_return\_type : 0  
bool p\_prototypelsWithoutParameters : 0  
int p\_gnu\_regparm\_attribute : -1  
SgFunctionType\* p\_type\_syntax : 0  
bool p\_type\_syntax\_is\_available : 0  
bool p\_using\_C11\_Noreturn\_keyword : 0  
bool p\_is\_constexpr : 0  
bool p\_using\_new\_function\_return\_type\_syntax : 0  
SgFunctionParameterScope\* p\_functionParameterScope : 0  
bool p\_marked\_as\_edg\_normalization : 0



pointer:0x7f0af0d93f50  
SgFunctionParameterList  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 7:1  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L7R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af0c439e0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832178  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08321d0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0d93f50  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_args : []

pointer:0x7f0aefe84010  
SgFunctionDefinition  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 8:1  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af0c439e0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832018  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0832070  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55730  
SgTypeTable\* p\_type\_table : 0x2287e60  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgBasicBlock\* p\_body : 0x7f0af04c2128  
std::map<SgNode\*,int> p\_scope\_number\_list : [0x7f0aefe84010->1, 0x7f0af04c2128->2]

pointer:0x7f0af04c2128  
SgBasicBlock  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 8:1  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefe84010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831f68  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831fc0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55600  
SgTypeTable\* p\_type\_table : 0x2287e38  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgStatementPtrList p\_statements : [0x7f0aefd43010, 0x7f0aefd432a0, 0x7f0aefd43530, 0x7f0af032e0d0]  
std::string p\_asm\_function\_body :

pointer:0x7f0aefd43010  
SgVariableDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 9:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: \_\_variable\_declaration\_\_variable\_type\_\_Pb\_\_d\_\_Pe\_\_variable\_name\_main\_0x7f0af0c439e0\_\_scope\_\_S

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af04c2128  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832388  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08323e0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 1  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aefd43010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgDeclarationStatement\* p\_baseTypeDefiningDeclaration : 0  
SgInitializedNamePtrList p\_variables : [0x7f0af0920978]  
bool p\_variableDeclarationContainsBaseTypeDefiningDeclaration : 0  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresGlobalNameQualificationOnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
unsigned short p\_gnu\_extension\_initialization\_priority : 0  
SgDeclarationStatement::gnu\_extension\_visibility\_attribute\_enum p\_gnu\_extension\_visibility : 0  
SgVariableDeclaration::gnu\_extension\_declaration\_attributes\_enum p\_gnu\_extension\_declaration\_attribute : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
bool p\_isAssociatedWithDeclarationList : 0  
bool p\_isFirstDeclarationOfDeclarationList : 1  
bool p\_is\_thread\_local : 0  
bool p\_is\_constexpr : 0

pointer:0x7f0af0920978  
SgInitializedName  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 9:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefd43010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832330  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08322d8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : x1  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af15bd268  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aefc25010  
SgStorageModifier\* p\_storageModifier : 0x2ecd618  
SgScopeStatement\* p\_scope : 0x7f0af04c2128  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 2  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0aefd432a0  
SgVariableDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 10:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: \_\_variable\_declaration\_\_variable\_type\_d\_variable\_name\_main\_0x7f0af0c439e0\_\_scope\_\_\_\_SgSS2\_\_\_\_scope\_\_\_\_

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af04c2128  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832598  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08325f0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 1  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aefd432a0  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgDeclarationStatement\* p\_baseTypeDefiningDeclaration : 0  
SgInitializedNamePtrList p\_variables : [0x7f0af0920ac0]  
bool p\_variableDeclarationContainsBaseTypeDefiningDeclaration : 0  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresGlobalNameQualificationOnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
unsigned short p\_gnu\_extension\_initialization\_priority : 0  
SgDeclarationStatement::gnu\_extension\_visibility\_attribute\_enum p\_gnu\_extension\_visibility : 0  
SgVariableDeclaration::gnu\_extension\_declaration\_attributes\_enum p\_gnu\_extension\_declaration\_attribute : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
bool p\_isAssociatedWithDeclarationList : 0  
bool p\_isFirstDeclarationOfDeclarationList : 1  
bool p\_is\_thread\_local : 0  
bool p\_is\_constexpr : 0

pointer:0x7f0af0920ac0  
SgInitializedName  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 10:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefd432a0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832540  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08324e8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : rh1  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af14a3010  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aefc25258  
SgStorageModifier\* p\_storageModifier : 0x2ecd640  
SgScopeStatement\* p\_scope : 0x7f0af04c2128  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 2  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0aefd43530  
SgVariableDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: \_\_variable\_declaration\_\_variable\_type\_0x7f0af07b90b0\_variable\_name\_main\_0x7f0af0c439e0\_\_scope\_\_\_\_S

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af04c2128  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af08327a8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0832800  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0x231e850  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 1  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aefd43530  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgDeclarationStatement\* p\_baseTypeDefiningDeclaration : 0  
SgInitializedNamePtrList p\_variables : [0x7f0af0920c08]  
bool p\_variableDeclarationContainsBaseTypeDefiningDeclaration : 0  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresGlobalNameQualificationOnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
unsigned short p\_gnu\_extension\_initialization\_priority : 0  
SgDeclarationStatement::gnu\_extension\_visibility\_attribute\_enum p\_gnu\_extension\_visibility : 0  
SgVariableDeclaration::gnu\_extension\_declaration\_attributes\_enum p\_gnu\_extension\_declaration\_attribute : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
bool p\_isAssociatedWithDeclarationList : 0  
bool p\_isFirstDeclarationOfDeclarationList : 1  
bool p\_is\_thread\_local : 0  
bool p\_is\_constexpr : 0



pointer:0x7f0af0920c08  
SgInitializedName  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefd43530  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832750  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08326f8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : kernel  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af07b90b0  
SgInitializer\* p\_initptr : 0x7f0aef620010  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aefc254a0  
SgStorageModifier\* p\_storageModifier : 0x2ecd668  
SgScopeStatement\* p\_scope : 0x7f0af04c2128  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 2  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 1  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0aef620010  
SgAssignInitializer  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: void

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af0920c08  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04770  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04718  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04668  
bool p\_is\_explicit\_cast : 1  
bool p\_is\_braced\_initialized : 0  
SgExpression\* p\_operand\_i : 0x7f0aef653010  
SgType\* p\_expression\_type : 0

pointer:0x7f0aef653010  
SgLambdaExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:17  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: void

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef620010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04610  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04458  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb046c0  
SgLambdaCaptureList\* p\_lambda\_capture\_list : 0x7f0aefbf6010  
SgClassDeclaration\* p\_lambda\_closure\_class : 0x7f0af015c010  
SgFunctionDeclaration\* p\_lambda\_function : 0x7f0aef8803f0  
bool p\_is\_mutable : 0  
bool p\_capture\_default : 1  
bool p\_default\_is\_by\_reference : 0  
bool p\_explicit\_return\_type : 0  
bool p\_has\_parameter\_decl : 1  
bool p\_is\_device : 0

pointer:0x7f0aefbf6010  
SgLambdaCaptureList  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:17  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef653010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832858  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0832648  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLambdaCapturePtrList p\_capture\_list : [0x7f0aefb2e010, 0x7f0aefb2e078]

pointer:0x7f0aefb2e010  
SgLambdaCapture  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:5  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefbf6010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832f38  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03010  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgExpression\* p\_capture\_variable : 0x7f0af03fa078  
SgExpression\* p\_source\_closure\_variable : 0  
SgExpression\* p\_closure\_variable : 0x7f0af03fa0e0  
bool p\_capture\_by\_reference : 0  
bool p\_implicit : 1  
bool p\_pack\_expansion : 0

pointer:0x7f0af03fa078  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 9:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefb2e010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832960  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af08329b8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af08326a0  
SgVariableSymbol\* p\_symbol : 0x2f625a0  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af03fa0e0  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:5  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefb2e010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0832e88  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0832ee0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af0832c20  
SgVariableSymbol\* p\_symbol : 0x2f62630  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0aefb2e078  
SgLambdaCapture  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:14  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefbf6010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03488  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb034e0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgExpression\* p\_capture\_variable : 0x7f0af03fa148  
SgExpression\* p\_source\_closure\_variable : 0  
SgExpression\* p\_closure\_variable : 0x7f0af03fa1b0  
bool p\_capture\_by\_reference : 0  
bool p\_implicit : 1  
bool p\_pack\_expansion : 0



pointer:0x7f0af03fa148  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 10:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefb2e078  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb030c0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03118  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0af0832e30  
SgVariableSymbol\* p\_symbol : 0x2f625d0  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af03fa1b0  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:14  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefb2e078  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb033d8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03430  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03170  
SgVariableSymbol\* p\_symbol : 0x2f62660  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af015c010  
SgClassDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:17  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: class\_\_\_\_anonymous\_0x2cf5c80

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef653010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0af0831bf8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0af0831c50  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 1  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af015c010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : \_\_\_\_anonymous\_0x2cf5c80  
SgClassDeclaration::class\_types p\_class\_type : 0  
SgClassType\* p\_type : 0x7f0af011d010  
SgClassDefinition\* p\_definition : 0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_from\_template : 0  
bool p\_fixupScope : 0  
bool p\_isUnNamed : 1  
bool p\_explicit\_annotation\_interface : 0  
bool p\_explicit\_interface : 0  
bool p\_explicit\_enum : 0  
bool p\_explicit\_anonymous : 0  
SgExprListExp\* p\_decoratorList : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
bool p\_isAutonomousDeclaration : 1  
bool p\_isRepresentingTemplateParameterInTemplateDeclaration : 0

pointer:0x7f0aef8803f0  
SgMemberFunctionDeclaration  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:20  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L8R\_\_L9R

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef653010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04350  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03590  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0aef8803f0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aef880010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : operator()  
SgFunctionParameterList\* p\_parameterList : 0x7f0af0d943f0  
SgFunctionModifier p\_functionModifier : <too long>: <too long>: SgFunctionModifier(isUnknown() = false isDefault() = true isInline()  
SgSpecialFunctionModifier p\_specialFunctionModifier : <too long>: <too long>: SgSpecialFunctionModifier(isUnknown() = false isDefault()  
SgTypePtrList p\_exceptionSpecification : []  
bool p\_named\_in\_end\_statement : 0  
std::string p\_asm\_name :  
SgExprListExp\* p\_decoratorList : 0  
SgFunctionType\* p\_type : 0x7f0aefa650b0  
SgFunctionDefinition\* p\_definition : 0x7f0aefe84140  
bool p\_oldStyleDefinition : 0  
SgScopeStatement\* p\_scope : 0x7f0aefb61010  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresNameQualificationOnReturnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
SgDeclarationStatement::gnu\_extension\_visability\_attribute\_enum p\_gnu\_extension\_visability : 1  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
int p\_name\_qualification\_length\_for\_return\_type : 0  
bool p\_type\_elaboration\_required\_for\_return\_type : 0  
bool p\_global\_qualification\_required\_for\_return\_type : 0  
bool p\_prototypelsWithoutParameters : 0  
int p\_gnu\_regparm\_attribute : -1  
SgFunctionType\* p\_type\_syntax : 0  
bool p\_type\_syntax\_is\_available : 0  
bool p\_using\_C11\_Noreturn\_keyword : 0  
bool p\_is\_constexpr : 0  
bool p\_using\_new\_function\_return\_type\_syntax : 0  
SgFunctionParameterScope\* p\_functionParameterScope : 0  
bool p\_marked\_as\_edg\_normalization : 0  
SgCtorInitializerList\* p\_CtorInitializerList : 0x7f0aef75e260  
SgClassDeclaration\* p\_associatedClassDeclaration : 0x7f0af015c550

pointer:0x7f0af0d943f0  
SgFunctionParameterList  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:20  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L9R

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SgNode\* p\_parent : 0x7f0aef8803f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03b68  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03bc0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0d943f0  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_args : [0x7f0af0921128]

pointer:0x7f0af0921128  
SgInitializedName  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 12:25  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af0d943f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb038a8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03900  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : i  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af18ec010  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aef8803f0  
SgStorageModifier\* p\_storageModifier : 0x2ecd708  
SgScopeStatement\* p\_scope : 0x7f0aefe84140  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 0  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0aefe84140  
SgFunctionDefinition  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 13:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0aef8803f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03958  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb039b0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55ac0  
SgTypeTable\* p\_type\_table : 0x2287ed8  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgBasicBlock\* p\_body : 0x7f0af04c2240  
std::map<SgNode\*,int> p\_scope\_number\_list : []

pointer:0x7f0af04c2240  
SgBasicBlock  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 13:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aefe84140  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb037f8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03850  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55990  
SgTypeTable\* p\_type\_table : 0x2287eb0  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgStatementPtrList p\_statements : [0x7f0af032e070]  
std::string p\_asm\_function\_body :



pointer:0x7f0af032e070  
SgExprStatement  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:5  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af04c2240  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04560  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb045b8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgExpression\* p\_expression : 0x7f0aef68a010

pointer:0x7f0aef68a010  
SgPlusAssignOp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:11  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double

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SgNode\* p\_parent : 0x7f0af032e070  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb044b0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04508  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04248  
SgExpression\* p\_lhs\_operand\_i : 0x7f0aef6c1010  
SgExpression\* p\_rhs\_operand\_i : 0x7f0aef6f8080  
SgType\* p\_expression\_type : 0  
SgExpression\* p\_originalExpressionTree : 0

pointer:0x7f0aef6c1010  
SgPtrArrRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:7  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: double

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef68a010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04090  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb040e8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 1  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03e28  
SgExpression\* p\_lhs\_operand\_i : 0x7f0aef6f8010  
SgExpression\* p\_rhs\_operand\_i : 0x7f0af03fa280  
SgType\* p\_expression\_type : 0  
SgExpression\* p\_originalExpressionTree : 0

pointer:0x7f0aef6f8010  
SgArrowExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: double \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6c1010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03e80  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03ed8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03c18  
SgExpression\* p\_lhs\_operand\_i : 0x7f0aef72f010  
SgExpression\* p\_rhs\_operand\_i : 0x7f0af03fa218  
SgType\* p\_expression\_type : 0  
SgExpression\* p\_originalExpressionTree : 0

pointer:0x7f0aef72f010  
SgThisExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: class \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6f8010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03c70  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03cc8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03a08  
SgClassSymbol\* p\_class\_symbol : 0x2f79c80  
int p\_pobj\_this : 0

pointer:0x7f0af03fa218  
SgVarRefExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: double \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6f8010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03d78  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03dd0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03a60  
SgVariableSymbol\* p\_symbol : 0x2f62630  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af03fa280  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 14:8  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: int

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6c1010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03f88  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03fe0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03d20  
SgVariableSymbol\* p\_symbol : 0x2f62690  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0aef6f8080  
SgArrowExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: double

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef68a010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb043a8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04400  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04140  
SgExpression\* p\_lhs\_operand\_i : 0x7f0aef72f070  
SgExpression\* p\_rhs\_operand\_i : 0x7f0af03fa2e8  
SgType\* p\_expression\_type : 0  
SgExpression\* p\_originalExpressionTree : 0



pointer:0x7f0aef72f070  
SgThisExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: class \*

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6f8080  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04198  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb041f0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03f30  
SgClassSymbol\* p\_class\_symbol : 0x2f79c80  
int p\_pobj\_this : 0

pointer:0x7f0af03fa2e8  
SgVarRefExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: double

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef6f8080  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb042a0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb042f8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04038  
SgVariableSymbol\* p\_symbol : 0x2f62660  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0aef75e260  
SgCtorInitializerList  
NULL\_FILE 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Declaration mangled name: L2R\_constructor\_initialization\_list\_

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aef8803f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb03ab8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb03b10  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0aef75e260  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aef75e260  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_ctors : []

pointer:0x7f0af032e0d0  
SgExprStatement  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 17:3  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af04c2128  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04c40  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04c98  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgExpression\* p\_expression : 0x7f0af035d080

pointer:0x7f0af035d080  
SgFunctionCallExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 17:9  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: void

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af032e0d0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04b90  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04be8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04928  
SgExpression\* p\_function : 0x7f0aef5e9010  
SgExprListExp\* p\_args : 0x7f0af0394078  
SgType\* p\_expression\_type : 0x7f0af17ec500  
bool p\_uses\_operator\_syntax : 0

pointer:0x7f0aef5e9010  
SgFunctionRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 17:3  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: void(class )

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af035d080  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04878  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb048d0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb03538  
SgFunctionSymbol\* p\_symbol\_i : 0x2df8f80  
SgFunctionType\* p\_function\_type : 0  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af0394078  
SgExprListExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: int

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af035d080  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04a88  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04ae0  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04820  
SgExpressionPtrList p\_expressions : [0x7f0af03fa350]

pointer:0x7f0af03fa350  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 17:10  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type:

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SgNode\* p\_parent : 0x7f0af0394078  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04980  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb049d8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb047c8  
SgVariableSymbol\* p\_symbol : 0x2f62600  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0



pointer:0x7f0aeff19430  
SgTemplateInstantiationFunctionDecl  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L5R

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SgNode\* p\_parent : 0x7f0af1da0120  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04b38  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04a30  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = false isFrie  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0x7f0aeff19430  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0aeff19010  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgName p\_name : forall < >  
SgFunctionParameterList\* p\_parameterList : 0x7f0af0d94640  
SgFunctionModifier p\_functionModifier : <too long>: <too long>: SgFunctionModifier(isUnknown() = false isDefault() = true isInline()  
SgSpecialFunctionModifier p\_specialFunctionModifier : <too long>: <too long>: SgSpecialFunctionModifier(isUnknown() = false isDefault()  
SgTypePtrList p\_exceptionSpecification : []  
bool p\_named\_in\_end\_statement : 0  
std::string p\_asm\_name :  
SgExprListExp\* p\_decoratorList : 0  
SgFunctionType\* p\_type : 0x7f0af17ec500  
SgFunctionDefinition\* p\_definition : 0x7f0aefe84270  
bool p\_oldStyleDefinition : 0  
SgScopeStatement\* p\_scope : 0x7f0af1da0120  
SgDeclarationStatement::template\_specialization\_enum p\_specialization : 1  
bool p\_requiresNameQualificationOnReturnType : 0  
std::string p\_gnu\_extension\_section :  
std::string p\_gnu\_extension\_alias :  
SgDeclarationStatement::gnu\_extension\_visability\_attribute\_enum p\_gnu\_extension\_visability : 1  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0  
int p\_name\_qualification\_length\_for\_return\_type : 0  
bool p\_type\_elaboration\_required\_for\_return\_type : 0  
bool p\_global\_qualification\_required\_for\_return\_type : 0  
bool p\_prototypelsWithoutParameters : 0  
int p\_gnu\_regparm\_attribute : -1  
SgFunctionType\* p\_type\_syntax : 0  
bool p\_type\_syntax\_is\_available : 0  
bool p\_using\_C11\_Noreturn\_keyword : 0  
bool p\_is\_constexpr : 0  
bool p\_using\_new\_function\_return\_type\_syntax : 0  
SgFunctionParameterScope\* p\_functionParameterScope : 0  
bool p\_marked\_as\_edg\_normalization : 0  
SgName p\_templateName : forall  
SgTemplateFunctionDeclaration\* p\_templateDeclaration : 0x7f0af054b010  
SgTemplateArgumentPtrList p\_templateArguments : [0x7f0af0757078]  
bool p\_nameResetFromMangledForm : 1  
bool p\_nameResetFromMangledForm : 1

pointer:0x7f0af0d94640  
SgFunctionParameterList  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Declaration mangled name: L6R

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SgNode\* p\_parent : 0x7f0aeff19430  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04fb0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05008  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
unsigned int p\_decl\_attributes : 0  
std::string p\_linkage :  
SgDeclarationModifier p\_declarationModifier : <too long>: <too long>: SgDeclarationModifier(isUnknown() = false isDefault() = true isFrien  
bool p\_nameOnly : 0  
bool p\_forward : 0  
bool p\_externBrace : 0  
bool p\_skipElaborateType : 0  
SgDeclarationStatement\* p\_definingDeclaration : 0  
SgDeclarationStatement\* p\_firstNondefiningDeclaration : 0x7f0af0d94640  
SgQualifiedNamePtrList p\_qualifiedNameList : []  
std::string p\_binding\_label :  
SgInitializedNamePtrList p\_args : [0x7f0af0921270]

pointer:0x7f0af0921270  
SgInitializedName  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0af0d94640  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04da0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04df8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgName p\_name : loop\_body  
std::string p\_microsoft\_uuid\_string :  
SgType\* p\_typeptr : 0x7f0af011d010  
SgInitializer\* p\_initptr : 0  
SgInitializedName\* p\_prev\_decl\_item : 0  
bool p\_is\_initializer : 1  
SgDeclarationStatement\* p\_declptr : 0x7f0aef119430  
SgStorageModifier\* p\_storageModifier : 0x2ecd730  
SgScopeStatement\* p\_scope : 0x7f0aefe84270  
SgInitializedName::preinitialization\_enum p\_preinitialization : 0  
bool p\_isCoArray : 0  
SgInitializedName::asm\_register\_name\_enum p\_register\_name\_code : 0  
SgInitializedName::excess\_specifier\_enum p\_excess\_specifier : 0  
std::string p\_register\_name\_string :  
bool p\_requiresGlobalNameQualificationOnType : 0  
bool p\_shapeDeferred : 0  
bool p\_initializationDeferred : 0  
SgBitVector p\_gnu\_attribute\_modifierVector : [F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F, F]  
unsigned long int p\_gnu\_attribute\_initialization\_priority : 0  
std::string p\_gnu\_attribute\_named\_weak\_reference :  
std::string p\_gnu\_attribute\_named\_alias :  
std::string p\_gnu\_attribute\_cleanup\_function :  
std::string p\_gnu\_attribute\_section\_name :  
int p\_gnu\_attribute\_alignment : -1  
SgDeclarationModifier::gnu\_declaration\_visability\_enum p\_gnu\_attribute\_visability : 0  
bool p\_protected\_declaration : 0  
int p\_name\_qualification\_length\_for\_type : 0  
bool p\_type\_elaboration\_required\_for\_type : 0  
bool p\_global\_qualification\_required\_for\_type : 0  
bool p\_hasArrayTypeWithEmptyBracketSyntax : 0  
bool p\_using\_C11\_Alignas\_keyword : 0  
SgNode\* p\_constant\_or\_type\_argument\_for\_Alignas\_keyword : 0  
bool p\_using\_auto\_keyword : 0  
bool p\_using\_device\_keyword : 0  
bool p\_is\_braced\_initialized : 0

pointer:0x7f0aefe84270  
SgFunctionDefinition  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0aeff19430  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04e50  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04ea8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55d20  
SgTypeTable\* p\_type\_table : 0x2287f28  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgBasicBlock\* p\_body : 0x7f0af04c2358  
std::map<SgNode\*,int> p\_scope\_number\_list : []

pointer:0x7f0af04c2358  
SgBasicBlock  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

[Click here to go to the parent node](#)

SgNode\* p\_parent : 0x7f0ae84270  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb04cf0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04d48  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgSymbolTable\* p\_symbol\_table : 0x7f0af1d55bf0  
SgTypeTable\* p\_type\_table : 0x2287f00  
std::set<SgSymbol\*> p\_type\_elaboration\_list : []  
std::set<SgSymbol\*> p\_hidden\_type\_list : []  
std::set<SgSymbol\*> p\_hidden\_declaration\_list : []  
SgStatementPtrList p\_statements : [0x7f0af032e130]  
std::string p\_asm\_function\_body :

pointer:0x7f0af032e130  
SgExprStatement  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:0

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SgNode\* p\_parent : 0x7f0af04c2358  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb05690  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb056e8  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
SgLabelRefExp\* p\_numeric\_label : 0  
int p\_source\_sequence\_value : -1  
SgExpression\* p\_expression : 0x7f0af035d0f0

pointer:0x7f0af035d0f0  
SgFunctionCallExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:13  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: void

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SgNode\* p\_parent : 0x7f0af032e130  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb055e0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05638  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb05378  
SgExpression\* p\_function : 0x7f0aef577010  
SgExprListExp\* p\_args : 0x7f0af03940e0  
SgType\* p\_expression\_type : 0x7f0aefa650b0  
bool p\_uses\_operator\_syntax : 1

pointer:0x7f0aef577010  
SgDotExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: void(int )

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SgNode\* p\_parent : 0x7f0af035d0f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb054d8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05530  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb05168  
SgExpression\* p\_lhs\_operand\_i : 0x7f0af03fa3b8  
SgExpression\* p\_rhs\_operand\_i : 0x7f0aef5ae010  
SgType\* p\_expression\_type : 0  
SgExpression\* p\_originalExpressionTree : 0



pointer:0x7f0af03fa3b8  
SgVarRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:3  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: class

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SgNode\* p\_parent : 0x7f0aef577010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xffffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb051c0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05218  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb05060  
SgVariableSymbol\* p\_symbol : 0x2f626c0  
SgExpression\* p\_originalExpressionTree : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0aef5ae010  
SgMemberFunctionRefExp  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:13  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: void(int )

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SgNode\* p\_parent : 0x7f0aef577010  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb050b8  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05110  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb04f00  
SgMemberFunctionSymbol\* p\_symbol\_i : 0x2f933a0  
int p\_virtual\_call : 0  
SgFunctionType\* p\_function\_type : 0  
int p\_need\_qualifier : 0  
int p\_name\_qualification\_length : 0  
bool p\_type\_elaboration\_required : 0  
bool p\_global\_qualification\_required : 0

pointer:0x7f0af03940e0  
SgExprListExp  
compilerGenerated 0:0  
IsTransformation:0  
IsOutputInCodeGeneration:1  
Expression type: int

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SgNode\* p\_parent : 0x7f0af035d0f0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb053d0  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb05428  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 0  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb052c8  
SgExpressionPtrList p\_expressions : [0x7f0af03c7078]

pointer:0x7f0af03c7078  
SgIntVal  
/home/liao6/workspace/github/rose-ast.git/autoKernel.cpp 4:14  
IsTransformation:0  
IsOutputInCodeGeneration:0  
Expression type: int

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SgNode\* p\_parent : 0x7f0af03940e0  
bool p\_isModified : 0  
bool p\_containsTransformation : 0  
\$CLASSNAME\* p\_freepointer : 0xfffffffffffff  
Sg\_File\_Info\* p\_startOfConstruct : 0x7f0aefb05270  
Sg\_File\_Info\* p\_endOfConstruct : 0x7f0aefb04f58  
AttachedPreprocessingInfoType\* p\_attachedPreprocessingInfoPtr : 0  
AstAttributeMechanism\* p\_attributeMechanism : 0  
bool p\_containsTransformationToSurroundingWhitespace : 0  
bool p\_need\_paren : 1  
bool p\_lvalue : 0  
bool p\_global\_qualified\_name : 0  
Sg\_File\_Info\* p\_operatorPosition : 0x7f0aefb05320  
SgExpression\* p\_originalExpressionTree : 0  
int p\_value : 0  
std::string p\_valueString : 0

