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NumPy Ufunc C-API

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PyObject \*

PyUFunc\_FromFuncAndData(PyUFuncGenericFunction \*func, void

\*\*data, char \*types, int ntypes, int nin, int

nout, int identity, const char \*name, const

char \*doc, int unused)

::

int

PyUFunc\_RegisterLoopForType(PyUFuncObject \*ufunc, int

usertype, PyUFuncGenericFunction

function, const int \*arg\_types, void

\*data)

::

int

PyUFunc\_GenericFunction(PyUFuncObject \*ufunc, PyObject \*args, PyObject

\*kwds, PyArrayObject \*\*op)

This generic function is called with the ufunc object, the arguments to it,

and an array of (pointers to) PyArrayObjects which are NULL.

'op' is an array of at least NPY\_MAXARGS PyArrayObject \*.

::

void

PyUFunc\_f\_f\_As\_d\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_d\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_f\_f(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_g\_g(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_F\_F\_As\_D\_D(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_F\_F(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_D\_D(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_G\_G(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_O\_O(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_ff\_f\_As\_dd\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_ff\_f(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_dd\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_gg\_g(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_FF\_F\_As\_DD\_D(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_DD\_D(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_FF\_F(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_GG\_G(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_OO\_O(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_O\_O\_method(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_OO\_O\_method(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_On\_Om(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

int

PyUFunc\_GetPyValues(char \*name, int \*bufsize, int \*errmask, PyObject

\*\*errobj)

On return, if errobj is populated with a non-NULL value, the caller

owns a new reference to errobj.

::

int

PyUFunc\_checkfperr(int errmask, PyObject \*errobj, int \*first)

::

void

PyUFunc\_clearfperr()

::

int

PyUFunc\_getfperr(void )

::

int

PyUFunc\_handlefperr(int errmask, PyObject \*errobj, int retstatus, int

\*first)

::

int

PyUFunc\_ReplaceLoopBySignature(PyUFuncObject

\*func, PyUFuncGenericFunction

newfunc, const int

\*signature, PyUFuncGenericFunction

\*oldfunc)

::

PyObject \*

PyUFunc\_FromFuncAndDataAndSignature(PyUFuncGenericFunction \*func, void

\*\*data, char \*types, int

ntypes, int nin, int nout, int

identity, const char \*name, const

char \*doc, int unused, const char

\*signature)

::

int

PyUFunc\_SetUsesArraysAsData(void \*\*data, size\_t i)

::

void

PyUFunc\_e\_e(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_e\_e\_As\_f\_f(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_e\_e\_As\_d\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_ee\_e(char \*\*args, npy\_intp \*dimensions, npy\_intp \*steps, void

\*func)

::

void

PyUFunc\_ee\_e\_As\_ff\_f(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

void

PyUFunc\_ee\_e\_As\_dd\_d(char \*\*args, npy\_intp \*dimensions, npy\_intp

\*steps, void \*func)

::

int

PyUFunc\_DefaultTypeResolver(PyUFuncObject \*ufunc, NPY\_CASTING

casting, PyArrayObject

\*\*operands, PyObject

\*type\_tup, PyArray\_Descr \*\*out\_dtypes)

This function applies the default type resolution rules

for the provided ufunc.

Returns 0 on success, -1 on error.

::

int

PyUFunc\_ValidateCasting(PyUFuncObject \*ufunc, NPY\_CASTING

casting, PyArrayObject

\*\*operands, PyArray\_Descr \*\*dtypes)

Validates that the input operands can be cast to

the input types, and the output types can be cast to

the output operands where provided.

Returns 0 on success, -1 (with exception raised) on validation failure.

::

int

PyUFunc\_RegisterLoopForDescr(PyUFuncObject \*ufunc, PyArray\_Descr

\*user\_dtype, PyUFuncGenericFunction

function, PyArray\_Descr

\*\*arg\_dtypes, void \*data)

::

PyObject \*

PyUFunc\_FromFuncAndDataAndSignatureAndIdentity(PyUFuncGenericFunction

\*func, void

\*\*data, char

\*types, int ntypes, int

nin, int nout, int

identity, const char

\*name, const char

\*doc, const int

unused, const char

\*signature, PyObject

\*identity\_value)