The Ninth International Python Conference (Python 9)

python

March 5-8, 2001
The Hilton Long Beach
Long Beach, California

http://www.python9.org

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To receive periodic updates on Python 9, please visit the Python 9 Web site (http://www.python9.org) and subscribe to the Python 9 Announcement List.

Register online today at http://www.python9.org **to take advantage of Early Bird rates!** Early Bird registration closes on Friday, February 2, 2001 (Midnight, EST). See page 12.

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● About the Conference

The Ninth International Python Conference is currently the world's most concentrated gathering of members of the Python language community. It is **the event** to learn more about Python and meet other users and developers from around the world for a lively exchange. This year, due to the growing interest in and attention to the language, the conference promises to break all records: more tutorials, more tracks, more papers, more posters and of course more attendees than ever! If you're a Python user, you don't want to miss this event!

The main conference will consist of two days of refereed paper and application tracks — including a Zope Track and a multi-technology Python Applications Track — as well as a poster display of new and useful applications and tools that utilize Python, and a vendor exhibit. The main conference will also feature keynote presentations by Guido van Rossum, the inventor of Python, and Bruce Eckel, president of MindView. The conference will be preceded by a day of tutorials for Python users at all levels and will be followed by a Developers' Day — a forum that brings together Python application and language developers.

● **Python 9 Tutorial Day**
Monday, March 5, 2001

As always, the Python Conference features a day jam-packed with excellent tutorials, ranging from introductions to Python basics to in-depth treatment of advanced topics and features. This year, ten tutorials will be offered: five in the morning and five in the afternoon.

● **Morning Tutorials**

● **Session:** T1

Title: Web Client-Side Programming with Python
Instructor: Moshe Zadka, Lerner Communication Consulting

This tutorial will address how to use both Python's client-side libraries (httplib, urllib) and Python's HTML parsing library (htmllib) to build Web-agents (programs that automate inter-actions with various Web sites). Since a growing number of Web sites, particularly those for which the community would like to use Web-agents, use secure HTTP, the tutorial will also cover Python's ability to connect to sites securely.

● **Session:** T2

Title: The Process of Documentation
Instructor: Michel Pelletier, Digital Creations, Inc.

For the past few months, Amos Latteier and Michel Pelletier have been working together to develop several processes for generating Zope documentation. This tutorial will describe two documentation processes: (1) the process of synthesizing, authoring, editing, reviewing and delivering new documenta-tion artifacts, and (2) the process of maintaining existing artifacts.

● **Session:** T3

Title: Using Glade for UI Design
Instructor: Brian Kelley, Bioreason, Inc.

Glade is a GUI builder that supports both the Gtk+ widget library and the higher-level GNOME UI library. Glade lets developers interactively lay out the windows of an application, specify functions to be called when various widget events occur, and much more. This tutorial will address how to use Glade with Python to build GUI applications. The techniques presented in this session can yield new applications with less time and effort than the techniques used in the past.

● **Session:** T4

Title: A Gentle Introduction to CORBA
Instructor:
Duncan Grisby, AT&T Laboratories,Cambridge

This tutorial introduces CORBA and its approach to distributed system design, based around the CORBA-to-Python mapping. It also dis-cusses real-world sit-uations where the use of Python as an imple-mentation language is appropriate and where it is not. Familiarity with Python is useful, but not essential.

● **Session:** T5

Title: Introduction to Zope

Instructor: Mike Homyack, Kaivo, Inc.

Participants in this tutorial will gain an understanding of the Zope architecture and learn how Zope is used to effectively develop and manage a robust corporate Web site. After a brief examination of the features of Zope, the session will examine the integration of Python within Zope, and end with an overview of how Zope can be extended using Python.

● **Afternoon Tutorials**

● **Session:** T6

Title: Python Advanced Topics: Focused Introductions

Instructor: Wesley Chun, CyberWeb Consulting

This tutorial will consist of three mini-lectures that introduce current Python programmers to three distinct areas of intermediate Python programming: Network Programming (with sockets), GUI Programming with Tkinter, and CGI Programming.

● **Session:** T7

Title: So You Want to Write About Python…

Instructors: Jon Erickson, Dr. Dobb's Journal; Frank Willison, O'Reilly & Associates; Greg Wilson, Baltimore Technologies, Inc.

In this tutorial, the instructors will look at what's involved in publishing books and magazine articles about Python. Topics that will be covered include: how to figure out what people want to read, the lifecycle of a magazine article, the editorial and production process at a major publisher and gaps in the market that need to be filled. Participants are encouraged to bring ideas and proposals for discussion and evaluation.

● **Session:** T8

Title: Jython from All Angles

Instructor: Bruce Eckel, MindView, Inc.

This tutorial will explore Jython (formerly known as JPython) in depth, looking in particular at the issues of passing objects back and forth between Python and Java, calling Python objects from Java and Java objects from Python and creating Python objects that can be turned into native Java classes.

● **Session:** T9

Title: Threaded Programming in Python

Instructor: Aahz, Consultant

This tutorial will be a fast-paced overview of threaded programming in Python, covering basic thread concepts, thread building blocks (locks, semaphores and queues) and threaded applications (a Web spider and a simple Tkinter application). The tutorial is suitable for anyone who is comfortable with Python classes.

● **Session:** T10

Title: Python for Scientific Computing

Instructor: Eric Jones, Enthought

This tutorial consists of four sections: (1) Numeric and its companion modules, with hints that minimize code and maximize speed, (2) 2D plotting tools and 3D visualization tools using the Visualization Toolkit (VTK), (3) legacy Fortran/C code integration using SWIG and f2py, and (4) parallel programming, a simple, pure Python approach for trivially parallel tasks and pyMPI for jobs needing more sophisticated parallelism.

**Python 9 Conference
Tuesday & Wednesday
March 6 & 7, 2001**

● **Keynote Speakers**

● **March 6, 2001**

Guido van Rossum
Director, PythonLabs, Digital Creations
"State of the Python Union"

● **March 7, 2001**

Bruce Eckel
President, MindView, Inc.
"Why I Love Python"

● **Refereed Paper Track
Tuesday & Wednesday, March 6 & 7, 2001**

The Python Refereed Paper Track will comprise two days of technical presentations by developers and users of the Python programming language and related technologies. These talks will:

● Present new and useful Python applications and tools

● Describe the use of Python in large, mission-critical or unusual applications

● Address practical programming problems for Python programmers based on lessons learned from experience

Late-breaking results and work-in-progress will be presented in a poster display.

The Refereed Paper Track will offer six sessions with four papers each. Presentation topics in each session are outlined in the following pages.

The first paper in each session has been nominated for **Best Paper Award**… and you select the winner!! Be sure to cast your vote for the Best Paper.

● **Session:** RP1
Title: Developing with Python I
Session Chair: Robin Friedrich, United Space Alliance, United States

Presentations:
*WAD: A Module for Converting Fatal Extension Errors into Python Exceptions David Beazley, University of Chicago, United States

Fortran to Python Interface Generator with an Application to Aerospace Engineering Pearu Peterson, Center of Nonlinear Studies, Institute of Cybernetics at Tallinn Technical University, Estonia; Joaquim R. R. A. Martins and Juan J. Alonso, Department of Aeronautics and Astronautics, Stanford University, United States

PYM — A Macro Preprocessor Based on Python Robert F. Tobler, Research Center for Virtual Reality and Visualization, Austria

JPE, the Java-Python Extension — Seamless Integration of Java and C-Python Frederic Giacometti, Arakne, France

● **Session:** RP2
Title: Python on the Net
Session Chair: Ka-Ping Yee, Independent Developer, United States

Presentations:
*Python for Massively Multiplayer Virtual Worlds Jason Asbahr, Origin Systems, Inc., United States

A Retargetable Thin-Client Architecture in Python Bryn Keller, Jenkon, Inc., United States

Programming SNMP Applications with Python Ilya Etingof, Independent Developer, Russia

AOLserver/PyWX: Embedding Python in a Threaded Web Server C. Titus Brown, California Institute of Technology, United States

● **Session:** RP3
Title: Consider the Possibilities
Session Chair: Frank Stajano, AT&T Laboratories and University of Cambridge, England

Presentations:
*Interpreting the Semantics of Music Notation Using an Extensible and Object-Oriented System Michael Droettboom, The Peabody Conservatory of Music of the Johns Hopkins University, United States

Mobile Computing with Python James "Wez" Weatherall and David Scott, Laboratory for Communications Engineering, England

OpenTechnology.org: A Discussion and Collaboration Engine Powered by Python and XML Uche Ogbuji, Fourthought, Inc., United States

CyberChair: An Online Paper Submission and Reviewing System Written in Python Richard van de Stadt, University of Twente, The Netherlands

*Nominated for Best Paper

Session: RP4

Title: Developing with Python II
Session Chair: David Beazley, University of Chicago, United States

Presentations
*A Component-Based Framework for Interactive Applications Using Messaging and Scripting Brent Burley and Rajesh Sharma, Walt Disney Feature Animation, United States

Introduction to Webware for Python Chuck Esterbrook, Webware for Python, United States

The CML2 Language: Python Implementation of a Constraint-Based Interactive Configurator Eric S. Raymond, Open Source Initiative, United States

Hybrid Programming with the Tix Widget Set Mike Clarkson, Internet Discovery, United States; Ioi Lam, Sun Microsystems, United States

● **Session:** RP5

Title: Python in Science
Session Chair: Lee Taylor, Lawrence Livermore National Laboratory, United States

Presentations:
*Re-Usable Components for Structural Bioinformatics Sophie I. Coon, Michel F. Sann and Arthur J. Olson, The Scripps Research Institute, United States

A Python Implementation for the High Level Control of an Autonomous Underwater Vehicle Benoit F. Dupire, Andres Folleco and Samuel M. Smith, Florida Atlantic University, United States

Martel: A Killer App for Python in Bioinformatics Andrew Dalke, Dalke Scientific Software, LLC, United States

ELLIPT2D: A Flexible Finite Element Code Written in Python Alexander Pletzer and John C. Mollis, Princeton Plasma Physics Laboratory, United States

● **Session:** RP6

Title: Something Completely Different
Session Chair: Jeremy Hylton, PythonLabs, Digital Creations, United States

Presentations:
*Implementation and Acceptance of NatLink, a Python-Based Macro System for Dragon NaturallySpeaking Joel Gould, Dragon Systems, Lernout & Hauspie Speech Products, United States

Using Python in a High School Computer Science Program - Year 2 Lex Berehzny, Jeffery Elkner and Jason Straw, Yorktown High School, United States

Data Mining with Python Ole Nielsen, Peter Christen, Markus Hegland and Tatiana Semenova, Australian National University, Australia

The AUTO2000 Command Line User Interface Randy Paffenroth, Applied and Computational Mathematics, California Institute of Technology, United States; Eusebius Doedel, Applied and Computational Mathematics, California Institute of Technology, United States and Computer Science, Concordia University, Canada

*Nominated for Best Paper

● Posters

P1 Toilet Paper Harlan Hile and Drew Perttula, University of California-Berkeley, United States

P2 Mod Snake: Flexible Apache Modules in Python Jon Travis, Covalent Technologies, United States

P3 Implementing a Python Interface for a Software Design Environment Vespe Savikko, Tampere University of Technology, Finland

P4 A WWW SQL Programming Tool with Persistent Database Connections Célio C. Guimarães, Institute of Computing, Unicamp, Brazil

P5 Using Python Server Pages Xiaoyun WU, State University of New York-Buffalo, CSE Department, United States

P6 Unum, Numbers with Units in Python Pierre X. Denis, Spacebel, Belgium

P7 PyClimate 1.0 - Python and the Analysis of Atmospheric and Oceano-graphic Data Sets Jon Saenz, Departamento de Fisica Aplicada II, Universidad del País Vasco, Spain; Juan Zubillaga and Jesus Fernandez, Departamento de Fisica de la Materia Condensada, Universidad del País Vasco, Spain

P8 Monte Carlo Techniques: Adaptive Integration Nikolas Kauer, University of Wisconsin-Madison, United States

● Zope Track
Tuesday & Wednesday, March 6 & 7, 2001

Digital Creations' Zope, written in Python, is the leading Open Source application server. Attendees of this track will learn Zope basics and advanced usage and hear about new developments in the Zope world.

● **Session:** Z1

Title: Construction and Use of Interface Objects Michel Pelletier, Digital Creations

● **Session:** Z2

Title: ZCVSMixin/CVS Folder: Object Oriented Version Control in Zope Steve Spicklemire, Silicon Prairie Ventures, Inc.

Additional sessions to be announced.

● **Python Applications Track**
  Tuesday & Wednesday, March 6 & 7, 2001

● **Session:** PA1

Title: Web Services
Speaker: Paul Prescod, ActiveState

Part One: Web Services Components with Python

According to luminaries as diverse as Tim Berners-Lee and Bill Gates, the Web of the future will be dominated by computers communicating with computers through "Web Services" protocols. A Web Service is a software component that uses Web technologies (typically URLs, HTTP and XML) to expose an API to clients and other servers. This talk will describe a component service framework and demonstrate an internally deployed component written in Python. The example application uses SOAP over HTTP.

Part Two: Accessing SOAP Services from Python

SOAP is an XML-based protocol for sharing information between applications. It is typically used in building Web Services. This talk will discuss how these services may be accessed from Python code. In particular, it will address the issues involved in sending information from dynamically typed languages to strongly typed servers through a marshalling syntax (XML), which only natively supports structured strings. This talk will demonstrate a SOAP client compatible with the service implemented in "Web Service Components with Python."

● **Session:** PA2

Title: To be announced
Speaker: To be announced
The PythonLabs development team at Digital Creations will host a Python Applications Track session featuring its current work on Python tools and applications. Some of its current projects are Mailman, the GNU mailing list manager, and ZODB, an object database for Python.

● **Session:** PA3

Title: Mozilla Technologies
Speaker: David Ascher, ActiveState

Part One: Komodo — Making Mozilla Useful with Python

This talk will present an overview of the history and architecture of Komodo, ActiveState's cross-platform IDE written mostly in Python, from the perspective of Python programmers. David will talk about what Mozilla had to offer, what Python had to offer, and where Mozilla-based solutions make sense for Python programmers. He will also discuss some of the lessons learned in the process.

Part Two: XML-Based User Interfaces for Python Programs

XUL stands for the XML UI Language. It is an XML-based format for defining cross-platform user interfaces. Python has many cross-platform user interface toolkits, but the Mozilla framework is unique in separating "user interface code" and application code completely and cleanly. In Mozilla, user interface code goes into XUL files. The code that supports the interface may be written in Python, C++, or any other XPCOM compatible language. Combinations of XUL and code can be turned into reusable objects using the XML Bindings Language (XBL). This talk will describe the basics of XUL and show how Python code can be connected to XUL through XPCOM.

● **Session:** PA4

Title: PythonWorks IDE and PythonWare Extensions
Secret Labs AB — creators of PythonWorks — will host a Python Applications Track session focusing on what modern IDEs can do to simplify the life of the Python programmer. As examples, some unique features of PythonWorks will be described, and the philosophy and technology behind them will be discussed. Implementations of other Secret Labs technologies that extend the use of Python will also be covered.

Part One: PythonWorks — Design Philosophy and Technology

Speakers: Fredrik Lundh, Matthew Ellis and Håkan Karlsson, Secret Labs AB
In Part One of this session, the speakers will talk about the design decisions behind PythonWorks. Tools that help save both time and effort will be covered, such as: efficient navigation of source code, automated testing, efficient building of GUIs, integration of useful information and deployment of applications.

Part Two: PythonWare — Other Extension Libraries

Speaker: Fredrik Lundh, Secret Labs AB
Secret Labs has been very active in providing supplemental libraries that extend the basic functions of Python. Some of them have evolved into de facto standards, e.g., PythonWare Imaging Library (PIL) and XMLRPC/SOAP libraries. The uses of and future plans for these libraries will be discussed in this session.

● **Session:** PA5

Title: Lightning Talks

Speakers: To Be Announced Jeremy Hylton of Digital Creations will chair the Lightning Talks session. The Lightning Talks — each five to seven minutes long — provide an opportunity for conference attendees to present new or ongoing work and cool ideas. Talks will be scheduled in the weeks leading up to the conference. If you want to give a Lightning Talk, please send e-mail with a brief overview of the topic to: lightning-talks@python9.org.

● **Session:** PA6

Title: Component Technologies

Speaker: Mark Hammond, ActiveState

Part One: Python for .NET

dot NET (.NET) is Microsoft's new framework. In this talk, Mark will describe the interaction between Python and .NET, covering the architecture of his Python for .NET work, with an emphasis on the most exciting features of .NET and what interoperability with .NET could mean for the future of Python.

Part Two: PyXPCOM

This talk will cover how Python components can be used as part of the Mozilla framework. It will begin with a very brief introduction to component programming, describe the "rules" of PyXPCOM and present in detail an example program that leverages both Mozilla and Python.

● **Python 9 Developers' Day Thursday, March 8, 2001**

Developers' Day is an exciting opportunity to participate in the ongoing development of the Python language. The purpose of Developers' Day is to bring together Python's users and core maintainers in a no-holds-barred "town hall" style meeting. Developers meet with the language maintainers and each other to discuss the evolution of Python, hear overviews of current projects and discuss the acceptance or rejection of proposed changes to the language. Discussions are lively because participants have a stake in Python's future. Developers' Day is considered to be the high point of the conference for many attendees.

● **Plenary Session**

Developers' Day starts with a plenary session led by Guido van Rossum. In addition to providing a broad overview of Python's future direction, Guido can be expected to conduct his traditional poll — an informal survey of how Python is used in the real world.

● **Break-Out Sessions**

The plenary session will be followed by two parallel series of break-out sessions. Attendees may participate in sessions from both series.

● **Series I**

● **Session:** D1-1

**Title: Stackless Python
Leader:** Gordon McMillan, *McMillan Enterprises;* Christian Tismer, Mission Impossible Software Team

Removing Python's dependency from the C stack has been a goal for developers serious about working with coroutines and generators. Stackless advocates argue that Python can be made stackless with no impact on Python's syntax or semantics.

● **Session:** D1-2

**Title: Batteries Included
Leader:** Moshe Zadka, Lerner Communications Consulting

During the 1998 Python Conference, Frank Stajano coined the phrase "batteries included" to describe the richness of Python's standard library. His phrase became the unofficial motto of the conference and an inspiration to build and maintain a fat distribution — a rich and versatile standard library that is immediately available — without making the user download separate packages.

● **Session:** D1-3

**Title: Comprehensive Python Catalog
Leader:** Andrew Kuchling, MEMS Exchange

One frequent complaint about Python is the lack of a comprehensive index for Python software. The Catalog-SIG has been started to redress this shortcoming. The aim of Catalog-SIG is to provide a single virtual repository (mirrored and searchable) of all downloadable Python material.

● **Series II**

● **Session:** D2-1

**Title: Collaborative Development Issues
Leader:** To Be Announced

The most important change in the current release of Python may not be in the code, but in how it is developed. Moving the Python source code to SourceForge has improved the scalability, but not without annoyances. One goal of this session will be to smooth out some of these aggravations.

● **Session:** D2-2

**Title: Python Software Foundation
Leader:** Dick Hardt, ActiveState

Guido and his team of developers are now working for Digital Creations, but their commitment to Python remains as strong as ever. Python will remain Open Source and the work on it will be owned by a non-profit organization — the Python Software Foundation. This session will discuss the goals and structure of the Python Software Foundation.

● **Session:** D2-3

**Title: Kick-starting Python 3K
Leader:** To Be Announced

Now is the time to start considering how to get Python 3K off the ground.

● **Registration Is Now Open!**

Register online today at http://www.python9.org **to take advantage of Early Bird rates!** Early Bird registration closes on Friday, February 2, 2001 (Midnight, EST).

● **Fee Schedule***

DATE	EVENT	EARLY BIRD RATE	REGULAR RATE	STUDENT RATE**
Monday March 5, 2001	Tutorial Day (w/wo Conference)	$325/350	$350/375	$175
Tuesday and Wednesday March 6 & 7, 2001	Conference	$425	$475	$195
Thursday March 8, 2001	Developers' Day (w/wo Conference)	$225/250	$250/275	$125
Monday through Thursday March 5–8, 2001	Total For All Events	$975	$1,075	$495

*A $50 service charge will be added for all on-site registrations and payments.
**Full-time students only. An appropriate ID will be required upon check-in.

The registration fee includes admission to sessions and events on the specific day(s) for which you register. Continental breakfast, lunch and two refreshment breaks will be served on each day, and there will be a reception for conference attendees on Tuesday evening, March 6, 2001. Tutorial attendees will receive bound tutorial notes for all tutorials. Conference attendees will receive proceedings for the Refereed Paper Track in both bound book and CD-ROM versions.

● Payment Options

● Prior to the close of Early Bird registration (Friday, February 2, 2001): Payment may be made by check (personal or company), via fax with a credit card or online with a credit card.

● After Early Bird registration closes, and prior to the close of online registration (Sunday, February 25, 2001): Payment will be accepted at the regular or student rate online with a credit card only.

● On-site payment: Payment may be made on site by credit card, personal check or cash at the regular or student rate (plus a $50 service charge).

● About the Venue

Python 9 will be held March 5–8, 2001 at the Hilton Long Beach in Long Beach, California.

The Hilton Long Beach, an AAA Four Diamond hotel, is located in downtown Long Beach at the west end of Ocean Boulevard at Golden Shore Avenue. Directly adjacent to the World Trade Center, the hotel is within walking distance of restaurants, shops and many local attractions. A block of rooms has been reserved for Python 9 attendees for the nights of Sunday, March 4, 2001 through Thursday, March 8, 2001. Identify yourself as an attendee of the Python Conference to take advantage of the special group rates!

● Conference Committee

Conference Chair
Guido van Rossum, Digital Creations

Program Chair
Paul Dubois, Lawrence Livermore National Laboratory

Zope Track Chair
Paul Everitt, Digital Creations

Python Applications Track Co-Chairs
David Ascher, ActiveState

Jeremy Hylton, Digital Creations

Fredrik Lundh, Secret Labs AB (PythonWare)

Tutorials Chair
Garry Hodgson, AT&T Labs

Developers' Day Chair
Jeff Bauer, Rubicon Research

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John Aycock, University of Victoria
David Beazley, University of Chicago
Bruce Eckel, MindView, Inc.
Robin Friedrich, United Space Alliance
Jim Fulton, Digital Creations
Janko Hauser, Institute for Marine Science, Kiel
Konrad Hinsen, Centre National de la Recherche Scientifique
Jeremy Hylton, Digital Creations
Martin von Löwis, Humboldt-Universität zu Berlin
Fredrik Lundh, Secret Labs AB (PythonWare)
Gordon McMillan, McMillan Enterprises, Inc.
Tim Peters, Digital Creations
Eric Raymond, Open Source Initiative
Greg Stein, ActiveState
Frank Stajano, AT&T Laboratories Cambridge and University of Cambridge
Lee Taylor, Lawrence Livermore National Laboratory
Greg Ward, MEMS Exchange
Aaron Watters, Consultant
Ka-Ping Yee, Independent Developer