Program of The 30th ESUG International Conference, Lille, France 8 - 11 July 2024

Day 1 - 8th of July 2024

Who watches the tests?

G Polito

Abstract: Automated testing is a popular technique to validate the correctness of programs. Tests specify the expected behaviour of a program, are used to guide program design with techniques such as TDD. Once written, they work as regression detectors: they tell us when bugs are introduced.

However, as developers can introduce bugs in a program, they can also introduce them in the tests. Who watches the watchmen? In this talk we will the new features in Mutalk v2 that make it practical for everyday use and far more interesting than code coverage.

Bio: Guille Polito is chargé de recherche at INRIA and the CRIStAL laboratory in the University of Lille, within the Evref team. He formerly worked on industry on service-oriented and mobile applications before doing a PhD on computer science. Guille's main research interests are compilers, modularity, tooling and automated testing. Guille participates in the Pharo community since 2010 and is now board member. His most noticeable contributions to the community are the Pharo Bootstrap process and Iceberg.

Virtual Reality in Pharo using WODEN Engine: Challenges and Demo.

Ronie Salgado

Abstract: Virtual Reality is the new frontier for immersive user experiences. WODEN Engine is a 3D graphics engine with a focus on scientific and engineering applications, but it is also meant to be used for prototyping and designing 3D interactive video games. So far, Virtual Reality support in Pharo and WODEN Engine has been quite limited, but with recent changes. This talk presents the new challenges that involve supporting and constructing a 3D immersive experience in VR using Pharo and WODEN Engine, along with their solutions and the presentation of a demo in virtual reality.

Bio: Ronie Salgado is a freelance software engineer and PhD Student at Universidad de Chile on programming languages and computer graphics. He is the main author of WODEN Engine, a 3D graphics engine in Pharo. He has been working on 3D graphics on Pharo since 2013 when he was still a computer science and software engineering undergrad student. He also has experience working on the Chilean videogame industry working on Omen of Sorrow for the PS4 and other videogames as a contractor at positions of software architect and senior software engineer.

How to get more people onboard with Pharo ? Applying LLM as support for the onboarding of new developers.

Name: Pascal Zaragoza, Marius Pingaud

Abstract: Last year, Large Language Model (LLM) have taken the spotlight in many fields with their ability to generate text in an intelligent manner. In computer science, they are being used to generate code, documentation, and also to explain any code base. These use cases rely on a technique called Retrieval Augmented Generation (RAG). This technique relies on retrieving the relevant document or code just in time to perform the task. In this work, we explore RAG to study their use in the onboarding of developers toward new technologies. As beginner in Pharo ourselves, we have developped a RAG on the Pharo code base and tested it on a set of questions from the official Pharo Discord where many new developers go to seek answer from the community. In this talk, we present a quick overview of LLM and how to build a RAG on any given documents (e.g., Pharo source code and public books of Pharo). Then, we demonstrate the ability of RAG to automatically help onboarding pharo users, based on previous questions found in the Pharo Discord.

Bio: Pascal Zaragoza has a PhD in computer science from the university of Montpellier. His thesis was on the migration of monolithic architecture toward microservice using model driven engineering. Since 2022, he works on integrating AI/LLM inside the workflow of Berger-Levrault products. Marius Pingaud is a computer science student in this first year of master at the university of Sorbonne Paris. He is also a part time intern at Berger-Levrault, under the supervision of Phd Pascal Zaragoza. His work focuses on the development of a RAG platform for Berger-Levrault and he explores the RAG ability to accelerate the onboarding of new developers.

Phausto : the sound within Pharo

Domenico Cipriani

Abstract: Phausto is a Pharo library that enables the generation of audio directly from Pharo itself. It leverages FFI calls to a dynamic library that exposes Faust's standard library and Box API to developers and sound artists. It is conceived to be lightweight, minimalist and multi-platform, by the use of the multi platform PortAudio open-source library for audio playback. The classes and methods in the Phausto package allow quick development and design of Digital Sound Processors (DSPs) such as synthesisers, physical models and audio effects and can be used both by Pharo developers (to add sounds to their applications) and by musicians and artists who want to approach computer music creation and DSP programming enjoying the easiness and the reflectiveness of Pharo. Furthermore, the integration of Phausto with the Coypu package for programming music on-the-fly turns Pharo into a stand alone environment for live coding performances.

Bio: Domenico Cipriani a.k.a. Lucretio has been releasing raw minimalist dance music for more than a decade and with his label Restoration has played an active role in the vinyl resurgence of the late 2000. After his graduation at the S.A.E. Institute of Barcelona, he has further developed his research on social semiotic with an M.A. in Linguistics at the University of Padova, focusing on an evolutionary approach to explaining language change. He has discovered Smalltalk with Symbolic Sound Kyma in 2016. In 2019, he presented at the »Sonic Experiments« festival at the ZKM an interactive performance based on network distributed Open Sound Control. He has been live coding with Kyma and Pharo since April 2020.

GemTalk Update and Roadmap

Norm Greenn & James Foster

Abstract: A brief overview of the GemStone architecture for scalable, multi-user Smalltalk followed by the GemStone/64 product roadmap.

Bio: Norm Green started his career in 1989 at IBM Canada in Toronto as a quality assurance engineer. In 1993, he moved to the DACS (Data Acquisition and Control System) team where he helped design and build DACS, site-wide data collection system in VisualWorks and GemStone/S Smallalk.
In 1996, he joined GemStone Systems as a Senior Consultant and traveled the world helping GemStone/S customers be successful. These days, Norm lives near Portland, Oregon, USA and holds the position of Chief Technical Officer at GemTalk Systems.

James Foster discovered the local university's computer center as a junior-high student in 1971 and a life-long obsession with computers began. He was introduced to Smalltalk/V for the Mac in the mid-90s, and became a Smalltalk fan. James teaches undergraduate computer science classes and serves as VP of Finance & Operations for GemTalk Systems. He is a passionate advocate for GemStone and all things Smalltalk.

Moldable Debugging

Andrei Chiș

Abstract: Moldable Development is a way of programming through custom tools built for each development problem. One type of tool that is moldable in Glamorous Toolkit is the debugger. The Moldable Debugger provides explicit support for creating and working with domain-specific debuggers. In this talk we show practical examples of domain-specific debuggers, and explore the mechanisms for creating custom debuggers that go from simple extensions based on exceptions to elaborate debugger interfaces. The examples show both how the debugger can adapt to different Pharo code executions, but also how the same infrastructure can adapt seamlessly to other languages and runtimes.

Bio: Andrei Chiș acts as a tool crafter at feenk (feenk.com) building tools and techniques for improving software development and is a co-author of Glamorous Toolkit (gtoolkit.org) platform. Andrei holds a PhD from the University of Bern. In his PhD he maintained that integrated development environments have to be moldable, that is, they have to be aware of the application under development and enable rapid customizations to new applications and tasks, and explored solutions to make this vision possible.

Debug Points

Steven Costiou

Abstract: Breakpoints. But Better.

Bio: Steven is an Inria researcher and works in the EVREF team. He builds and studies debugging tools to help developers understand their programs and fix bugs. In this context, his research interests span reflection and meta-programming, object-centric instrumentation, dynamic software adaptation and dynamic languages. Website: https://kloum.io/costiou

Toplo: a gorgeous widget library for Pharo

Alain Plantec

Abstract: Toplo: a gorgeous widget library for Pharo inspired by the http://ant.design library.

Bio: Alain is one of the creator of Bloc and the main designer and developer of Toplo

Building a GTK app with Spec

Esteban Lorenzano, Pharo Consortium Christophe Demarey, Inria research center of University of Lille

Abstract:

In this talk, you will discover the power of designing your GUI with the SPEC framework. You can design your app as usual and render it with the Morphic backend inside the Pharo image or, you can choose to go to the GTK backend and use OS windows.

We will present you how to design an app with Spec to be compatible with the GTK backend. You will also see how to package and distribute your app with GTK.

Bio: Esteban Lorenzano studied Computer Sciences at Universidad de Buenos Aires, and worked since 1994 in several object-oriented and low-level technologies, in different software companies, serving in various positions from programmer to senior architect. In 2007 he co-founded Smallworks to offer Pharo-based agile

development projects. Since 2012 he dedicated full time to developing the Pharo code and community. He works with the INRIA-RMoD team in Lille, France, as core developer for Pharo, being responsible with the coordination of new releases, the implementation and maintenance of Pharo libraries and the maintenance of the Pharo flavour of the Cog Virtual Machine, FFI integration and plugins in all major platforms (OSX, Linux and Windows). Christophe Demarey is a research engineer at Inria Lille, working in tight relation with the Evref team. Christophe participates in the Pharo community since 2012. His most noticeable contributions in the past months are in the Pharo Launcher and contributing to the Pharo ecosystem. Christophe is interested in Software Craftsmanship and had initiated Inria Continuous Integration service.

Title: Webside 2.0

Guille Amaral

Abstract: Webside (https://github.com/guillermoamaral/Webside) is an API aimed at standarizing a way to talk to a Smalltalk system through HTTP. It also comes with one possible application: a fully operational IDE. During the presentation at ESUG 22 (NoviSad), questions around the extensibility of such IDE arose. In this talk, I'm going to present the progress in that regard, together with other improvements made since that presentation in the context a real development enviroment. Bio: Guille is the creator of Webside. He has been devoted to Smalltalk for more than 20 years, using and enjoying it throughout his entire academic and professional career. He is currently working for Quorum Software, a solution provider for the oil & gas industry.

Day 2 - 9th of July 2024

Unicode String Implementations - An Overview

Henry Johansen

Abstract: Most Smalltalk dialects now include string classes that can represent Unicode codepoints. However, the way in which different dialects provide this can differ quite a bit. This presentation will give a general overview of the implementations in VAST, Pharo, GemStone, and Cuis, with an extra focus on Unicode string hashing, comparing the design choices and tradeoffs involved.

Bio: Henry Johansen is a software developer with professional experience in most Smalltalk dialects. His passions include maintainable code, performance, and three-element lists. Since joining Instantiations, he's contributed to extending the use of Unicode strings in VAST's development tools, and has started making improvements to the VM.

Building Full-Stack Unicode Applications with VAST

Esteban Maringolo

Abstract: The VAST Platform's extensive Unicode support enables the creation of applications that cater to global audiences with diverse language requirements. In this presentation, we'll walk you through the creation of a full-stack demo application that seamlessly integrates and reliably manages Unicode strings across its various layers. Starting from the user interface on the web, we will demonstrate how Unicode strings are handled on the Seaside server. Then, we'll show how these strings are manipulated within the development tools. Finally, we'll explore how Unicode text is stored and retrieved in the database storage layer.

Bio: Esteban A. Maringolo is a senior software developer specializing in analysis, application development, and web architectures. Due to his experience with other Smalltalk dialects, he was keen to join the Instantiations team in 2019 to improve the extensibility of VAST and bridge the gap between it and other platforms. Esteban is involved in ongoing improvements to VAST's new Unicode and Async frameworks, and he's an active member of the Smalltalk development community with regular contributions to various open source projects.

Cormas: Progress and Roadmap

Oleksandr Zaitsev

"Abstract:" Cormas is an agent-based modelling platform developed in Pharo which is particularly well-suited for the companion modelling approach. In my presentation, I will talk about the recent progress in the development of Cormas: migration to Spec2 and Pharo 12, reducing the dependencies, better UI. I will also present the roadmap for improving Cormas by making it more accessible for researchers with limited programming skills and for local stakeholders.

"Bio:" Oleksandr Zaitsev is a computer science researcher at CIRAD - a French agricultural research and international cooperation organization working for the sustainable development of tropical and Mediterranean regions. Oleksandr works on software engineering and AI techniques for participatory agent-based modelling and serious games. In 2022, he defended his PhD at Inria Lille; his thesis was about data mining-based tools to support software evolution. Oleksandr is contributing to many open-source projecs (DataFrame, PolyMath, Pharo-AI). He is currently the lead developer of the Cormas modelling platform.

Glamorous Toolkit

Andrei Chiș

Abstract: Glamorous Toolkit is the Moldable Development environment. In this talk we provide an update of the environemt since version 1.0 and show through concrete practical cases how a single environment can be molded to many contexts.

Bio: Andrei Chiș acts as a tool crafter at feenk (feenk.com) building tools and techniques for improving software development and is a co-author of Glamorous

Toolkit (gtoolkit.org) platform. Andrei holds a PhD from the University of Bern. In his PhD he maintained that integrated development environments have to be moldable, that is, they have to be aware of the application under development and enable rapid customizations to new applications and tasks, and explored solutions to make this vision possible.

Manage your Pharo images from command line

Christophe Demarey, Inria research center of University of Lille

Abstract:

Dealing with Pharo images and their Virutal Machines is not always easy. Since some years, Pharo Launcher helps to organize your images and VMs nicely and be more productive.

We will present this year a new way to manage your images through command-line. You will see that most actions available with Pharo Launcher UI are now available on command-line with the pharo-launcher command. You will also discover new features available only for command-line that will boost your productivity: create an image with code from your repository, list running images, spot a bug with bisection.

Bio: Christophe Demarey is a research engineer at Inria Lille, working in tight relation with the Evref team. Christophe participates in the Pharo community since 2012. His most noticeable contributions in the past months are in the Pharo Launcher and contributing to the Pharo ecosystem. Christophe is interested in Software Craftsmanship and had initiated Inria Continuous Integration service.

Asynchronous Programming with Async and Await

James Foster

Abstract: Many modern languages support asynchronous programming using the async/await syntax. In this presentation we look at this pattern and compare and contrast it with the Smalltalk process model.

Bio: James Foster discovered the local university's computer center as a junior-high student in 1971 and a life-long obsession with computers began. He was introduced to Smalltalk/V for the Mac in the mid-90s, and became a Smalltalk fan. James teaches undergraduate computer science classes and serves as VP of Finance & Operations for GemTalk Systems. He is a passionate advocate for GemStone and all things Smalltalk.

Notebooks

Massimo Nocentini

Abstract: In this talk I will present my project called "Notebooks". It shows how to document Smalltalk software by combining documentation text with

executable Playgrounds. The documentation can also include interfaces to foreign languages used. It can be navigated and edited from within Smalltalk allowing Playgrounds to be executed immediately. The full documentation can be exported as either PDF or SVG files.

Technologies used are: - Outliners: recursive visualization of objects driven by slot descriptors. - Treesitter: syntax coloring for C, Lua and SQL. - Pango: a new Roassal shape to render text given in gmarkup format. - A new Microdown visitor, to render documentation via Roassal. - Poppler: a new Roassal shape to render PDF files directly in your own image.

Bio: Massimo Nocentini got his PhD in computer science at the University of Florence, Italy. Currently he works as freelancer using Smalltalk in his 9to5 job. He is interested in documentation and in the application of the functional approach to programming and design.

Pyramid: a User Interface Editor for Bloc

Yann Le Goff

Abstract: Implementing or understanding the composition of User Interfaces can be tedious. At Thales-DMS, we implement Pyramid, a tool designed to edit Bloc UI. We use it to implement or change our prototype's UI even on a running application.

In this talk we will present the different features of Pyramid based on demonstrations.

Bio: Yann Le Goff is a PhD student in the University of Brest (FRANCE). He developped Pyramid during an internship at Thales DMS. He was introduced to Smalltalk and Pharo during his internship.

Runtime type collection and its usage in code transpiling

Pavel Krivanek

Abstract:

While Pharo significantly benefits from the flexibility and expressiveness of strong, dynamic typing, in some cases, the static type annotations of code can play an irreplaceable role. In this presentation, we will discuss our approach to adding type annotations to existing code with the help of runtime type collection based on the Metalinks infrastructure. We will then demonstrate how we utilized these annotations for the successful transpiling of Pharo code to a statically typed language.

Bio: Pavel Krivanek is a software engineer at Nidea s.r.o. that focuses on software consulting. The former member of the INRIA RMoD team. He actively participates in the Pharo open-source community with the primary

focus on Pharo modularization, bootstrapping and cleaning and meta-modelling infrastructure.

Pharo 12

S. Ducasse & P. Tesone

Abstract: In this talk I will present the Pharo 12 release. Pharo 12 got massive improvements underneath. - Permanent space in production - Fully optimised version of tag - Tool migration to Spec2 - Spec enhancements - New architecture for refactoring - Leaner version of Metacello - Strict mode for FFI - Bloc preview I will also develop the vision around Pharo architecture in terms of new UI.

Bio: Stéphane Ducasse is one of the creator of Pharo. He leads Pharo development with a special attention to make sure that while Pharo delivers exciting new features, it can be used by companies to deliver business values.

Day 3 - 10th of July 2024

Instantiations Company Update & VAST 2025 Preview

Seth Berman

Abstract: Instantiations is committed to continuing investment in the VAST Platform and ongoing involvement with the Smalltalk community. Get an update on our progress, and see where we're headed in the near future. Plus, get an overview of the features coming to VAST Platform 2025!

Bio: Seth Berman is President & CEO of Instantiations. He oversees a dedicated team that tirelessly supports and enhances Instantiations' VAST Platform, while he guides expansion into new software/service areas like Fintech, IoT, cloud, and edge computing solutions. Before leading Instantiations, Seth joined the company in 2011 as a software engineer working on projects ranging from advanced code editors and cryptography libraries to FFI enhancements and virtual machine implementations. Previously, he worked for the US government in a variety of domains including stochastic simulation, operations research, grid computing, and link analysis. Seth has a B.S. in Computer Science and an M.S. in Software Engineering.

How easy is to write a JIT compiler?

G Polito

Abstract: JIT compilers are compilers that accelerate most-used methods by detecting them and compiling to machine code at runtime. However, the required expertise and the engineering cost to implement a JIT compiler cannot be ignored.

In this talk we will showcase Druid: a meta-compiler that automatically generates part of a JIT compiler for you. Druid splits the maintenance of the JIT compiler

from the maintenance of the language interpreter. This allows experts to focus on their own domain and brings clear interfaces between them. We will show that this auto-generated approach not only improves modularity but also improves interpreter performance, and presents nice perspectives for the future.

Bio: Guille Polito is chargé de recherche at INRIA and the CRIStAL laboratory in the University of Lille, within the Evref team. He formerly worked on industry on service-oriented and mobile applications before doing a PhD on computer science. Guille's main research interests are compilers, modularity, tooling and automated testing. Guille participates in the Pharo community since 2010 and is now board member. His most noticeable contributions to the community are the Pharo Bootstrap process and Iceberg.

Bridging the Gap: Streamlining Pharo FFI Bindings

Esteban Lorenzano

Abstract: The Pharo FFI (Foreign Function Interface) system is an excellent tool that enables Pharo users to create bindings with external C libraries. However, there's a significant drawback that often discourages its use: the bindings must be manually created, a process that can be slow and prone to crashes. This talk presents a solution to bridge that gap.

Bio: Esteban Lorenzano studied Computer Sciences at Universidad de Buenos Aires, and worked since 1994 in several object-oriented and low-level technologies, in different software companies, serving in various positions from programmer to senior architect. In 2007 he co-founded Smallworks to offer Pharo-based agile development projects. Since 2012 he dedicated full time to developing the Pharo code and community. He works with the INRIA-RMoD (now Evred) team in Lille, France, as core developer for Pharo, being responsible with the coordination of new releases and the implementation and maintenance of Pharo libraries.

Title: Beagle Smalltalk

David Buck

Abstract: Beagle Smalltalk is a new dialect of Smalltalk destined to be open source. It's intended to be a vehicle to help new programmers explore the joy and adventure of programming. This presentation will include - the language and its implementation - the compiler and code generator - development tools and UIs using web browsers - sample "kits" for new programmers to build on

Bio: David Buck is the president of Simberon Incorporated. He has been doing Smalltalk consulting and training for over 30 years. He has written games for iOS and Android using Smalltalk and has used Smalltalk to explore areas of software development from business applications to games and simulated physics.

gt4gemstone

Andrei Chiș

Abstract: Moldable Development is a way of programming through custom tools built for each development problem. Glamorous Toolkit is an environment for Moldable Development. It is implemented in Pharo and, of course, it offers an experience for Pharo as well. But it's made to work with arbitrary technologies.

In this talk we show how it works when developing in GemStone. In particular, the talk shows how tools like Lepiter, Coder and Debugger seamlessly work with GemStone and how extensions defined once can work with both local and remote objects.

Bio: Andrei Chiș acts as a tool crafter at feenk (feenk.com) building tools and techniques for improving software development and is a co-author of Glamorous Toolkit (gtoolkit.org) platform. Andrei holds a PhD from the University of Bern. In his PhD he maintained that integrated development environments have to be moldable, that is, they have to be aware of the application under development and enable rapid customizations to new applications and tasks, and explored solutions to make this vision possible.

The Pharo Debugger and Debugging Tools: Advances and Roadmap

Steven Costiou

Abstract: In this talk we summarize the latest debugger improvements. We will also try to present a map of the current unsolved problems, and of the most requested features from the community that we aim to incorporate into our roadmap.

Bio: Steven is an Inria researcher and works in the EVREF team. He builds and studies debugging tools to help developers understand their programs and fix bugs. In this context, his research interests span reflection and meta-programming, object-centric instrumentation, dynamic software adaptation and dynamic languages. Website: https://kloum.io/costiou

Patterns for Data Aquisition

Eric Lepors

Abstract: When building application s that you collect data from constraint source of information such as senosrs, it is challenging to design systems so that they do not lose data. In this talk I will present some of the patterns that we use in out application.

Bio: E. Lepors works for Thalès Group.

CodeParadise

Erik Stel

Abstract: CodeParadise is a framework which aids in developing web applications and Node.js applications using Pharo Smalltalk. This talk will explain how CodeParadise can be used. The talk is based on an application consisting of a web application, a mobile app and a backend server application running on Node.js. All created using Pharo Smalltalk and the CodeParadise framework.

Bio: Erik Stel (aka ErikOnBike) is creating software and cycling since he was a child. The Smalltalk virus got to him in the late 90's and still leaves its marks. Currently Erik works as an independent software engineer and consultant, building software or advising about software development. With a focus on software 'for a good cause' he tries to make his impact, doing the thing he likes most: creating useful software.

WebST: Web Components with PharoJS

Noury BOURAQADI (https://nootrix.com/)

Abstract: Web Components are standard web technologies that support the definition of reusable custom HTML elements. This JavaScript API allows defining both the view of web components as well as their behavior. Web component custom tags can encapsulate the view in a "shadow" DOM tree. This support creating web pages combining different web components from different sources while avoiding collisions.

This talk introduces WebST (https://github.com/bouraqadi/WebST), a PharoJS-based (https://pharojs.org) solution to seamlessly implement and test web components using the powerful Pharo Smalltalk IDE. By delving into practical examples, we demonstrate how WebST facilitates the implementation and reuse of web components. Moreover, for production purposes, WebST generates web clients with standalone HTML and JavaScript code.

Bio: Noury Bouraqadi is a software developer, maker, repair hobbyist, environment/technology/robots lover. Noury works part-time as a university professor at IMT Nord Europe, in the Autonomous and ResilienT Systems group. His remaining work time is dedicated to a startup that uses PharoJS to build a SaaS for teaching PLC programming & factory automation: PLC3000 (https://plc3000.com).

Detecting and preventing Pharo vulnerabilities

Imen Sayar & Steven Costiou

Abstract: Object-oriented applications are prone to vulnerabilities in their code leading to attacks. These attacks, once detected, are declared in known databases such as Mitre (https://cve.mitre.org/) and NVD (https://nvd.nist.gov/). Based on some criteria such as the severity and the scope, these attacks are classified according to the Open Source Foundation for Application Security (OWASP: https://owasp.org/www-project-top-ten/) into more than 10 categories. In the Mitre database, there are no declared attacks against Pharo code. Recently, we

have conducted an experiment to simulate attacks on Pharo using log files as a entry point for attacks. We have succeded in carring out an attack targeting code written in Pharo. In this talk, we will present some concepts linked to the attacks of object-oriented languages. We will, then, give a PoC and explain how the simulated attack is perfromed. We will conclude by giving some lessons learned and good practices to avoid this kind of attacks.

Bio: Imen is a Lecturer in Computer Science in the Evref Team and at the FST of University of Lille. She has obtained her Ph.D from the University of Lorraine. Her research areas include the code analysis for vulnerability detection, meta-modelling, and formal development of Cyber-Physical Systems (CPS) and Systems of Systems (SoS). You can contact her at imen.sayar@inria.fr

Steven is an Inria researcher and works in the EVREF team. He builds and studies debugging tools to help developers understand their programs and fix bugs. In this context, his research interests span reflection and meta-programming, object-centric instrumentation, dynamic software adaptation and dynamic languages. Website: https://kloum.io/costiou

Day 4 - 11th of July 2024

Object-Centric Debugging: Debug Points

Valentin Bourcier, Steven Costiou

Abstract: Object-Centric Debugging is a technique that focuses debugging tools on objects rather than on the call stack. Object-centric breakpoints are already available in Pharo since 2019. Recently we conducted an empirical experiment to study the impact of object-centric breakpoints and the results are encouraging. In this talk, we will take the opportunity to present again the object-centric breakpoints, then we will discuss the preliminary findings of our experiment. Additionally, we aim to share our perspective on object-centric debugging, advocating for its expansion beyond breakpoints within Pharo and discussing why and how we should pursue this advancement.

Bio: Steven is an Inria researcher and works in the EVREF team. He builds and studies debugging tools to help developers understand their programs and fix bugs. In this context, his research interests span reflection and meta-programming, object-centric instrumentation, dynamic software adaptation and dynamic languages. Website: https://kloum.io/costiou

Valentin Bourcier is a PhD student at Inria in the EVREF team since October 2022. He studies object-centric debugging, a novel debugging technique that aims at lowering the cost of debugging object-oriented programs. In this context, Valentin's main interests are debugging methodologies, debugging techniques, especially object-centric instrumentation but also other techniques based on language analysis or language features such as reflection.

gt4python: Moldable Development for Python

S. Van Caekenberghe

Abstract: Moldable Development is a way of programming through custom tools built for each development problem. Glamorous Toolkit is an environment for Moldable Development. It is implemented in Pharo and, of course, it offers an experience for Pharo as well. But it's made to work with arbitrary technologies.

In this talk we show how it works when developing in Python. In particular, the talk shows demos of Python snippets that work with object inspectors extensible through Python code, a Python debugger that works seamlessly, a coding experience including completion and even a custom made profiler.

Bio: Sven Van Caekenberghe is a veteran Smalltalk developer and longtime contributor to the Pharo ecosystem. He is currently a developer experience crafter at feenk (feenk.com) building tools and techniques for making software systems explainable.

A tale about scale

Norbert Hartl

Abstract: Scale is a term often used by people with very different meanings. In software development is one of the big causes for pre-mature optimizations and complexity. After a couple of years since the last talk about how to do projects with pharo here comes an updated version.

Bio: Norbert Hartl has a long track record of creating and building software projects. Currently he is on a mission to create projects with zero dependencies. He co-founded ApptiveGrid where he is working at the moment. He also co-founded PharoPro.

Getting more from your Pharo IDE

Cyril Ferlicot-Delbecque

Abstract:

Pharo has the particularity to be at the same time a programing language and an IDE. This can make it easy to customize even further the IDE compared to other languages.

It as hard for an IDE to cover everyone's perfect workflow, but it is possible to adapt the Pharo IDE to add those missing touches and increase our productivity.

In this presentation I'll show what kind of customizations I am doing.

Bio: Cyril Ferlicot-Delbecque is a research and development engineer working in the Inria Evref team. He works since 2015 on divers project around Pharo and on Pharo itself. He's currently working on software analysis to detect

security vulnerabilities in software with the project Software Heritage Security (https://swhsec.github.io/).

Behind the scenes: The Making of VAST

Mariano Martinez Peck

Abstract: You've probably already heard much about how organizations develop and deploy Smalltalk applications, but how is a complete Smalltalk platform made? In this talk, get a behind-the-scenes look at how Instantiations creates the VAST Platform. We'll discuss how we successfully develop, test, benchmark, and build a commercial Smalltalk platform like VAST.

Bio: Mariano Martinez Peck is a systems engineer specializing in dynamic programming language software. In 2018, he joined Instantiations to further develop the VAST Platform through the addition of new frameworks, libraries and tools, as well as improving the existing code base of VAST. He is active in the Smalltalk development community, and has used his expertise to co-author numerous open source projects. Mariano has a PhD in Computer Science, and his academic research has been published across various international journals. In addition to his development duties, he currently leads the VAST Platform engineering team at Instantiations. In his personal time, Mariano enjoys traveling as well as outdoor activities like camping and fishing.

Fluid Class Defintions In Pharo 12

Marcus Denker

Abstract:

With Pharo12, the Fluid Class Definition format is now the default.

We will first look back at the traditional Smalltalk-80 class defintion format and show the problems that it has.

Then we present the Pharo Fluid Class Defintiona and show how it solves these problems. We discuss how the Fluid format works hand in hand with First Class Variables. After some examples of Fluid in Pharo12, we discuss what Fluid could enable in the future.

Bio: Marcus Denker is a permanent researcher (CR1, with tenure) at INRIA Lille. Before, he was a postdoc at the PLEIAD lab/DCC University of Chile and the Software Composition Group, University of Bern. His research focuses on reflection and meta-programming for dynamic languages. He is an active participant in the Squeak and Pharo open source communities for many years. Marcus Denker received a PhD in Computer Science from the University of Bern/Switzerland in 2008 and a Dipl.-Inform. (MSc) from the University of Karlsruhe/Germany in 2004. He co-founded ZWEIDENKER in 2009. He is a member of ACM, GI and a board-member of ESUG.

gt4llm: A programmable environment for large language models

Veit Heller

Abstract: Glamorous Toolkit (GT) is an environment for exploring systems, documenting them, and communicating about them. As such, views on objects, both technical and for the domain, are essential. And although GT aims to make creating views inexpensive and for them to be amortized as quickly as possible, it is still often repetitive work. So naturally, we explored how to generate that code using a large language model (LLM), a tool which is great at performing repetitive work quickly. While working on this, we also created an infrastructure for working with LLMs more generally, enabling a moldable approach to exploring the interaction with models.

Bio: Veit is a developer experience crafter at feenk (feenk.com) building tools and techniques for making software systems explainable.

Data Storytelling with Pharo

Offray Luna

Abstract: This talk will present how data storytelling is used in a local hackerspace, since 2015, and with undergrad and post-grad in the Javeriana University, since 2022, to introduce non developers to computational thinking via several prototypes and experiences including: - Interactive documentation. - Performative grassroots (re)publishing of books and booklets - (Inter)personal wikis and web sites for learning experiences and research projects. - "Data portraits" of presidential candidates as civic tech to innovate in polical participation.

Bio: Offray is a hacktivist, researcher and academician, currently he works as a full time professor in the Javeriana University in Colombia and he does consultancy in his entreprise mutabiT. He is the creator of the civic tech and data storytelling and visualization tool Grafoscopio and a bootstrapper/facilitator of its community.