

juliacon

Baltimore 2019

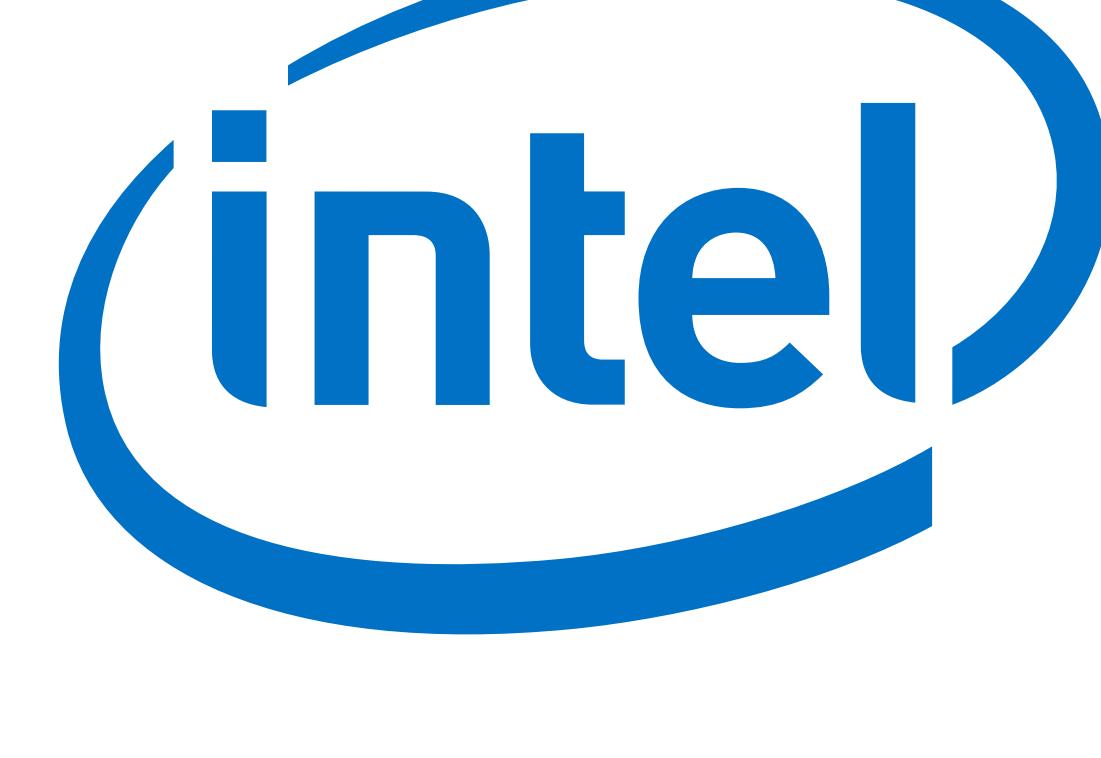


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J.P. Morgan

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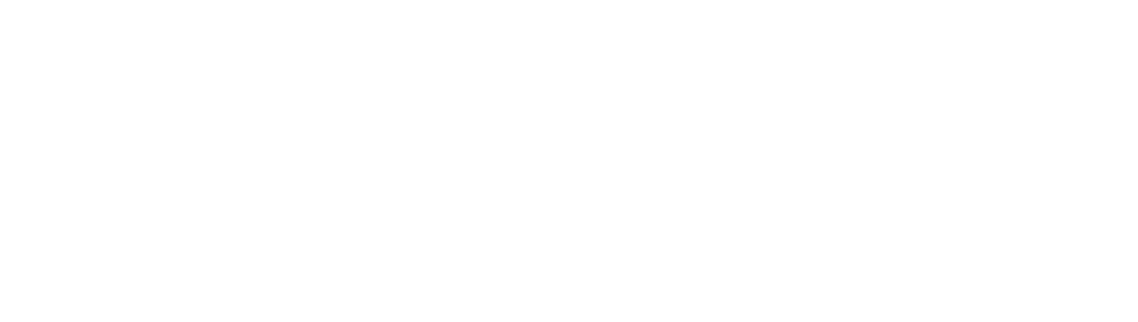
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Welcome!

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Room 349

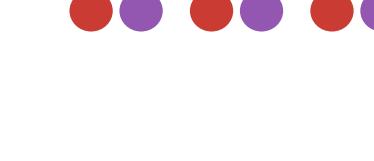
Tuesday, 23 July

11:00 Fredrik Ekre
Pkg, Project.toml, Manifest.toml and Environments

11:30 Rory Finnegan
FilePaths: File system abstractions and why we need them

11:40 Jay Dweck
Ultimate Datetime

11:50 Ahan Sengupta
Smart House with JuliaBerry



14:30 Anthony Blaom
MLJ - Machine Learning in Julia

15:00 Valentin Mari, Nicolás Monzón, Adán Mauri Ungaro, Demian Panigo

Merging machine learning and econometric algorithms to improve feature selection with Julia

15:10 Jun Tian
Let's Play Hanabi!

15:20 Paulito Palmes
TSM (Time Series Machine Learning)



15:45 Ludovic Räss
Porting a massively parallel Multi-GPU application to Julia: a 3-D nonlinear multi-physics flow solver

16:15 Elliot Saba
XLA.jl: Julia on TPUs

16:45 James Bradbury
Targeting Accelerators with MLIR.jl

16:55 Nicolau Leal Werneck
SIMD and cache-aware sorting with ChipSort.jl

17:05 Ranjan Anantharaman, Sungwoo Jeong
Generic Sparse Data Structures on GPUs

17:15 Rohan McLure
Array Data Distribution with ArrayChannels.jl

17:25 Tom Kwong
High-Performance Portfolio Risk Aggregation

Wednesday, 24 July

11:00 Roger Luo
Yao.jl: Extensible, Efficient Quantum Algorithm Design for Humans.

11:30 David P. Sanders
Guaranteed Constrained and unconstrained global optimization in Julia

11:40 Michael Droettboom
Pyodide: The scientific Python stack compiled to WebAssembly

11:50 William L. Fredericks, Venkat Viswanathan, Shashank Sripad, Matthew Guttenberg
Julia for Battery Model Parameter Estimation



14:30 Rebecca Sarfati
Heterogeneous Agent Dynamic Stochastic General Equilibrium (DSGE) Models in Julia at the Federal Reserve Bank of New York

15:00 Ethan Matlin
“Online” Estimation of Macroeconomic Models



15:45 Mike Innes
Differentiate All The Things!

16:15 Avik Pal
Differentiable Rendering and its Applications in Deep Learning

16:25 Jesse Bettencourt
Neural Ordinary Differential Equations with DiffEqFlux

16:35 Elisabeth Roesch
Fitting Neural Ordinary Differential Equations with DiffEqFlux.jl

17:05 Ramchandran Muthukumar
Randomized Sketching for Approximate Gradients : Applications to PDE Constrained Optimization and Backpropagation.

17:15 Filippo Vicentini
Neural Network states and unsupervised learning for Open Quantum Systems

17:25 Dhairyा Gandhi
Machine Learning for Social Good

Thursday, 25 July

11:00 Stefan Karpinski
The Unreasonable Effectiveness of Multiple Dispatch

11:30 Joshua Ballanco
Julia’s Killer App(s): Implementing State Machines Simply using Multiple Dispatch

11:40 Xingjian Guo
What I learned from developing ExponentialUtilities.jl

11:50 Roger Luo
JuliaCN: A community driven localization group for Julia in China



14:30 Scott Haney
Writing maintainable Julia code

15:00 Tim Wheeler
How We Wrote a Textbook using Julia



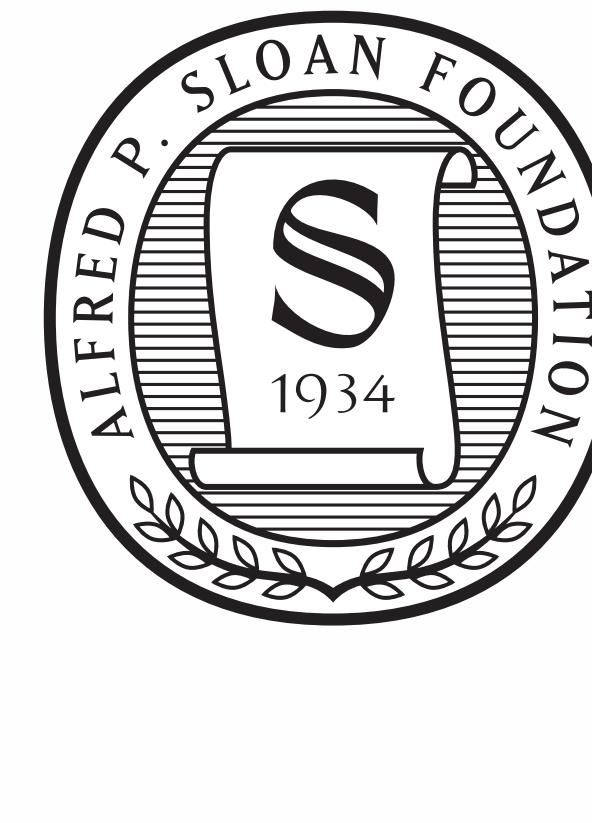
15:45 Cameron Pfiffer
Turing: Probabilistic Programming in Julia

16:15 Will Tebbutt
Gaussian Process Probabilistic Programming with Stheno.jl

16:45 Chad Scherrer
Soss.jl: Probabilistic Metaprogramming in Julia

17:15 Marco Cusumano-Towner
Gen: a general-purpose probabilistic programming system with programmable inference built on Julia

17:25 Cédric St-Jean-Leblanc
A probabilistic programming language for switching Kalman filters



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Elm A

Tuesday, 23 July

11:00 Katharine Hyatt, Matthew Fishman

Intelligent Tensors in Julia

11:30 Michiel Stock

A general-purpose toolbox for efficient Kronecker-based learning

11:40 Jeff Bezanson

Thread Based Parallelism part 2

11:50 Jameson Nash

Thread Based Parallelism part 1



14:30 Morten Pihlbech

Generating documentation: under the hood of Documenter.jl

15:00 Fredrik Ekre

Literate programming with Literate.jl

15:10 Dominique Luna

Formatting Julia



15:45 Alex Lew

Cleaning messy data with Julia and Gen

16:15 Brandon Taylor

LightQuery.jl

16:45 Jacob Quinn

State of the Data: JuliaData

16:55 Mary McGrath

Prototyping Visualizations for the Web with Vega and Julia

17:05 Simon Danisch

A Showcase for Makie

Wednesday, 24 July

11:00 Dheepak

Why writing C interfaces in Julia is so easy*

11:30 Aaron Christianson

Backticks and the Glorious Command Literal

11:40 Patrick Kofod Mogensen

Re-designing Optim

11:50 Dai ZJ

Towards Faster Sorting and Group-by operations



14:30 Christine R Herlihy, James Fairbanks

SemanticModels.jl: not just another modeling framework

15:00 Randy Zwit

OmniSci.jl: Bringing the open-source, GPU-accelerated relational database to Julia



15:45 Tillmann Weisser, Benoit Legat, Chris Coey, Lea Kapelevich, Juan Pablo Vielma

Polynomial and Moment Optimization in Julia and JuMP

17:30



11:00 Shashi Gowda

Julia + JavaScript = <3

11:30 Mohammed El-Beltagy, Amgad Naiem

Julia web servers deployment

11:40 Bogumił Kamiński

A case study of migrating Timelineapp.co to the Julia language

11:50 Renee Spear

The Julia Language 1.0 Ephemeris and Physical Constants Reader for Solar System Bodies



14:30 Nathan Daly

If Runtime isn't Funtime: Controlling Compile-time Execution

15:00 Takafumi Arakaki

Transducers: data-oriented abstraction for sequential and parallel algorithms on containers



15:45 Yingbo Ma

Efficient Stiff Ordinary Differential Equation Solvers for Quantitative Systems Pharmacology (QsP)

16:15 Vaibhav Dixit

Simulation and estimation of Nonlinear Mixed Effects Models with PuMaS.jl

16:45 Bram De Jaegher

An advanced electrodialysis process model in the Julia ecosystem

16:55 Shubham Maddhashiya

IVIVC.jl: In vitro – in vivo correlation module as part of an integrated pharmaceutical modeling and simulation platform

17:05 Vasco Verissimo, Laurent Heirendt

GigaSOM.jl: Huge-scale, high-performance flow cytometry clustering in Julia

17:15 benjamin chu

MendelIHT.jl: How to fit Generalized Linear Models for High Dimensional Genetics (GWAS) Data

17:25 Alec Bills

Electrifying Transportation with Julia



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Elm B

Tuesday, 23 July

11:00 Robin Deits

The Linguistics of Puzzles: Solving Cryptic Crosswords in Julia

11:30 Jeffrey Sarnoff

Counting On Floating Point

11:40 Bogumił Kamiński, Przemysław Szufel

Analyzing social networks with SimpleHypergraphs.jl

11:50 Takuya Kitazawa

Recommendation.jl: Building Recommender Systems in Julia



14:30 Tucker McClure

A New Breed of Vehicle Simulation

15:00 Martin Otter, Andrea Neumayr

Modia3D: Modeling and Simulation of 3D-Systems in Julia

15:10 Brian Jackson

TrajectoryOptimization.jl: A testbed for optimization-based robotic motion planning

15:20 Sam Claassens, Dehann Fourie

Non-Gaussian State-estimation with JuliaRobotics/Caesar.jl



15:45 David Widmann

Solving Delay Differential Equations with Julia

16:15 Dheepak

Open Source Power System Production Cost Modeling in Julia

16:45 Chris Rackauckas

Real-time prediction and control of dynamical models via machine learning

17:15 Andrew Rosemburg

HydroPowerModels.jl: A Julia/JuMP Package for Hydrothermal economic dispatch Optimization

17:25 Michel Schanen

Modeling in Julia at Exascale for Power Grids

Wednesday, 24 July

11:00 Jeff Mills

Probabilistic Biostatistics: Adventures with Julia from Code to Clinic

11:30 Virginia Spanoudaki

Slow images, fast numbers: Using Julia in biomedical imaging and beyond

11:40 Amita Varma

Brain Tumour Classification with Julia

11:50 Swakkhar Shatabda, Dewan Md. Farid

Mining Imbalanced Big Data with Julia

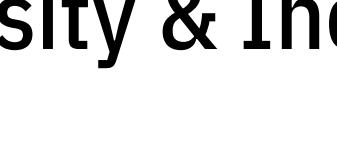


14:30 Clark C. Evans

DataKnots.jl - an extensible, practical and coherent algebra of query combinators

15:00 David Anthoff

Queryverse - Under the Hood



15:45 Elwin van 't Wout, Kevin S Bonham

Raising Diversity & Inclusion among Julia users

17:30



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Raising Diversity & Inclusion among Julia users

Thursday, 25 July

11:00 David P. Sanders

Interval methods for scientific computing in Julia

11:30 Daniel Bachrathy

Implicit Geometry with Multi-Dimensional Bisection Method

11:40 Alberto Paoluzzi

Computational topology and Boolean operations with Julia sparse arrays

11:50 Michael Reed

Geometric algebra in Julia with Grassmann.jl



14:30 David Anthoff, Lisa Rennels, Cora Kingdon

Mimi.jl – Next Generation Climate Economics Modeling

15:00 Charlie Kawczynski, Simon Byrne

The Climate Machine: A New Earth System Model in Julia



15:45 Harrison Grodin

Symbolic Manipulation in Julia

16:15 Lyndon White (@oxinabox)

Building a Debugger with Cassette

16:45 Valentin Churavy

Static walks through dynamic programs – a conversation with type-inference.

16:55 Valentin Churavy

Concolic Fuzzing – Or how to run a theorem prover on your Julia code

17:05 Tim Holy

Analyzing and updating code with JuliaInterpreter and Revise

17:15 Kristoffer Carlsson

TimerOutputs.jl - a cheap and cheerful instrumenting profiler

17:25 Simon Danisch

PackageCompiler



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NS Room 130

Tuesday, 23 July

08:30 JuliaCon Committee

Opening Remarks

08:40 Professor Madeleine Udell

* Keynote: Professor Madeleine Udell

09:30 Sebastian Pfitzner, Tim Holy

Debugging code with JuliaInterpreter

10:00 Paul Petersen

Sponsor Address: Intel

10:05 Viral B. Shah

Julia Survey Results

**13:30 Dr Cynthia J Musante**

* Keynote: Dr Cynthia J Musante

Wednesday, 24 July

08:40 Professor Steven G Johnson

* Keynote: Professor Steven G Johnson

09:30 Jiahao Chen

Sponsor Address: J P Morgan Chase & Co.

09:45 Stefan Karpinski

Sponsor Address: Julia Computing

09:50 Seth Bromberger

Using Julia in Secure Environments



Thursday, 25 July

08:40 Professor Heather Miller

* Keynote: Professor Heather Miller

09:30 Jeff Bezanson

What's Bad About Julia

10:00 Vijay Ivaturi

Sponsor Address: University of Maryland



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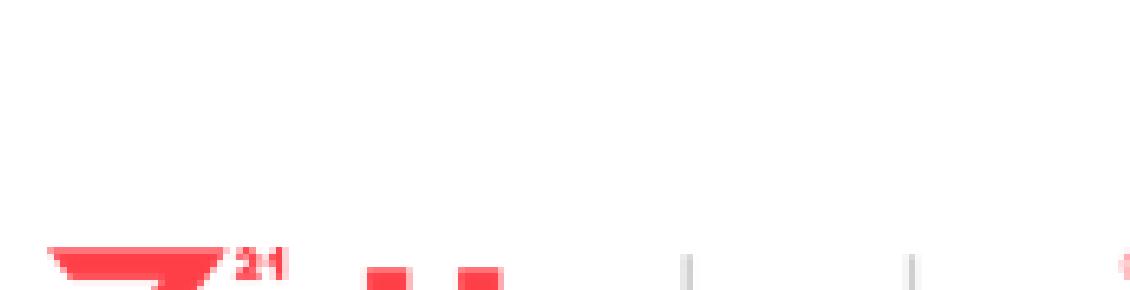
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