Navigating the Julia Package Ecosystem

The Journey of JuliaPackages.com

Journey Through Julia

From Observer to Packages

- ## Name

  Dan Segal

- ## Background

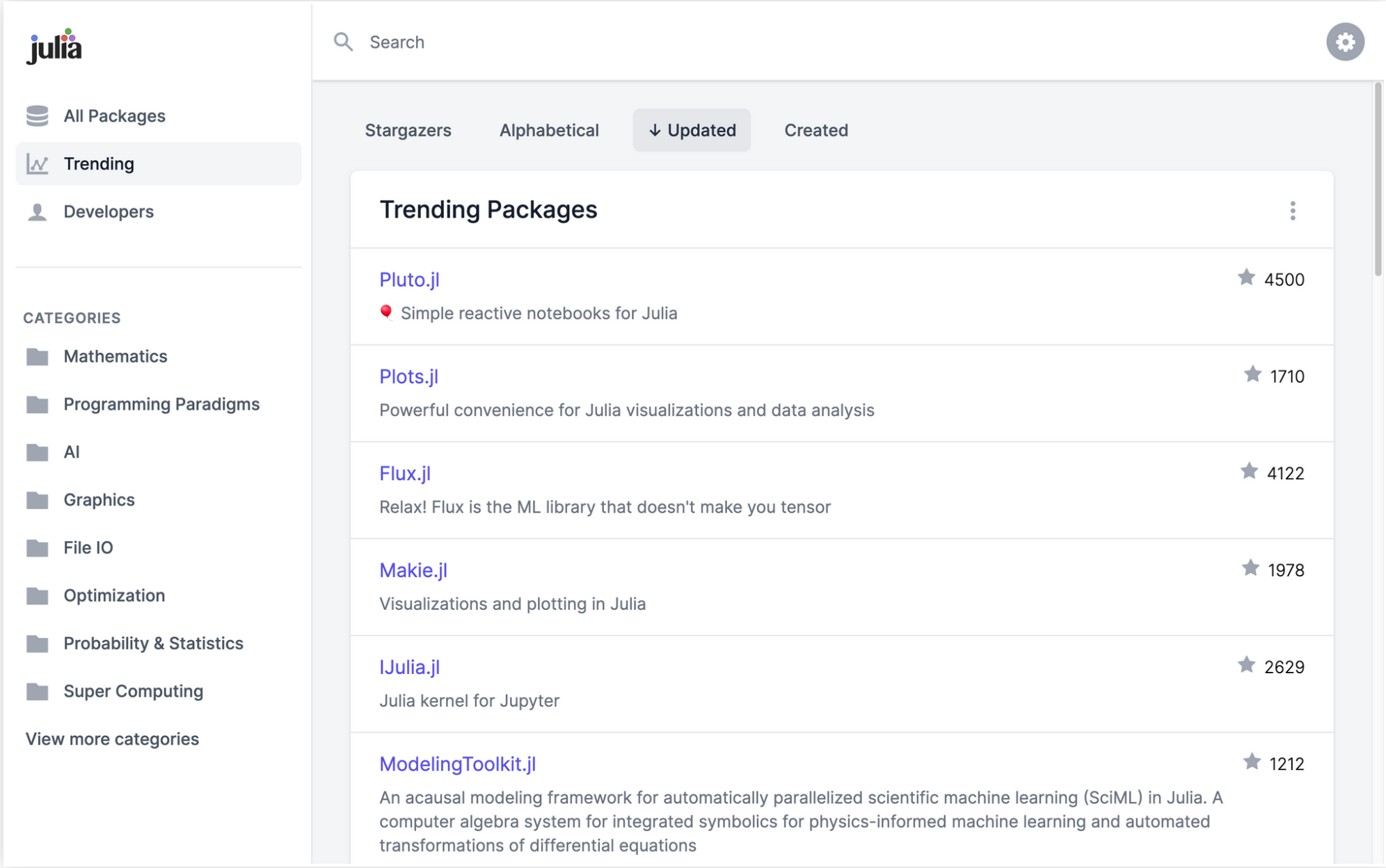
  Master's degree in Nuclear Engineering from MIT.

  Data Engineer with a focus on big data and AI solutions.

- ## Julia Connection

  Introduced to Julia during grad school, became a fan.

  Created JuliaObserver in 2016, now known as JuliaPackages.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An acausal modeling framework for automatically parallelized scientific machine learning (SciML) in Julia. A computer algebra system for integrated symbolics for physics-informed machine learning and automated transformations of differential equations

Inspiration and Driving Forces

- The Gap:
  No central platform for discovering, comparing, and understanding Julia packages in 2016

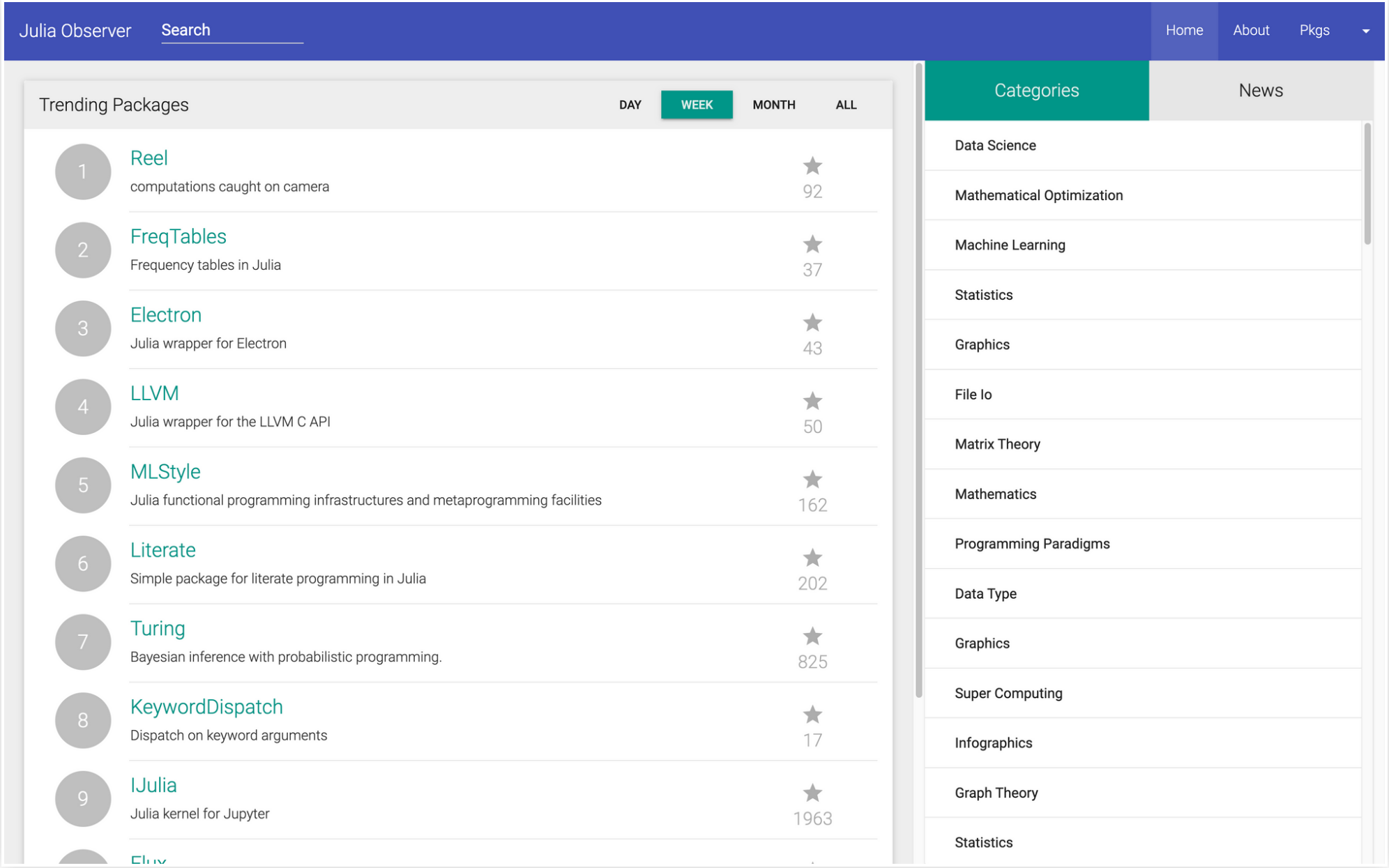
- Inspiration:
  Other language's package browsing websites (EmberObserver, Ruby Toolbox, PyPI)

- Goal:
  To provide a user-friendly, comprehensive, and informative package browsing experience for the Julia community

Building Julia Observer

The Early Days

- ## Beginning of the Journey:
  - Started with building a simple package browsing website.
  - Design web interface using CSS frameworks and Ruby on Rails.
  - Expanded the feature set based on user feedback and personal ideas.
- ## Learning and Growth:
  - Learnt to use APIs, databases, and modern web technologies.
  - Mastered managing complex data structures and handling large volumes of data.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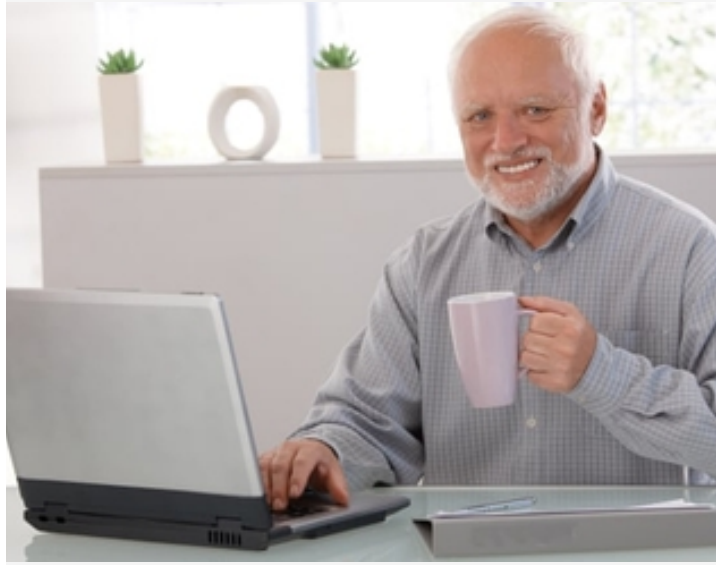
Challenges and Overcoming Them

The Growth Years



- **In 2020, I decided to start from scratch**
  This time using TailwindUI and everything I learned
- **Received valuable user feedback and suggestions**
  Implemented changes including unregistered packages and dependencies
- **Dealing with API changes and limitations**
  Addressed: throttle limits, authentication changes, deprecated API versions

Surprises and Unexpected Outcomes

- **Project gaining traction faster than expected**

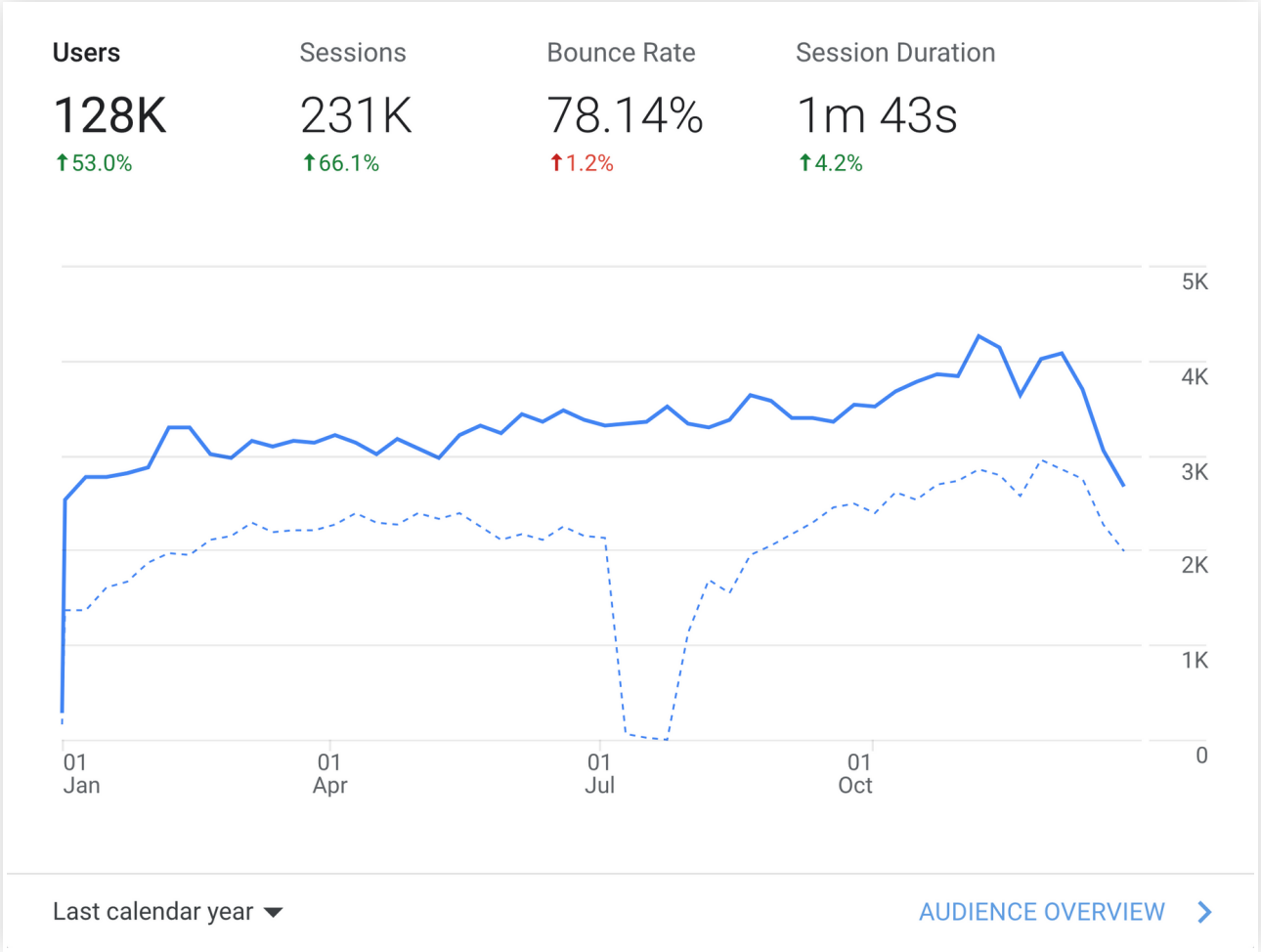
  Now gets ~20k users a month,
  with 250k total users since 2016

- **Funding from Julia Computing**

  Mentioned on Julia's official website

- **Even saw someone using JuliaPackages**

  While I was walking around Courant at NYU



Categorizing Packages

- **The challenge of categorizing Julia packages:**

  Initial attempts to categorize packages using traditional methods yielded unsatisfactory results.

  Recognized the need for a more effective solution to enhance site usability and provide value to users.

Categorizing Packages with ChatGPT

- **The challenge of categorizing Julia packages:**

  Initial attempts to categorize packages using traditional methods yielded unsatisfactory results.

  Recognized the need for a more effective solution to enhance site usability and provide value to users.

- **Enter ChatGPT:**

  Decided to experiment with OpenAI's ChatGPT to categorize packages.

  Not only did this successfully categorize packages but also added a unique edge to the project.

- **The value of ChatGPT:**

  Despite some initial hiccups, integrating ChatGPT greatly improved the categorization process.

  Its usage exemplifies the potential of AI in enhancing and streamlining development tasks.

Conclusion

And Future Direction

JuliaPackages Today:

Now a major resource with 20k users monthly, and enjoys a prominent place in the Julia community.

Future Aspirations:

Plans to expand JuliaPackages, incorporate more AI-powered features, and continue supporting the Julia community.

Conclusion:

JuliaPackages journey has been a mix of challenges & triumphs, offering valuable lessons and immense satisfaction.

Questions & Answers

- **Questions? Thoughts? Insights?**

  Open to discussion on any aspects of the presentation

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- Thank you for your time and interest

  Looking forward to potential future discussions and collaborations