

David Dudson

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I am a cross-paradigm, performance driven, Scala/Java Software Developer who specializes in meta-programming. With a passion for learning new languages, paradigms and frameworks, I can adapt to any team. Excelling in both collaborative and independent environments, I write clean, maintainable code to ensure future organizational success.

Technical

Languages, Libraries and Skills

SCALA

I have 6 years Scala experience, 2 and a half in industry. I have given a talk and follow-up workshop on the language at the local Software Development meetup group.

JAVA

I have 7 years Java experience, 2 and a half in industry. I am a competent OO developer and have spent a lot of time profiling the JVM and optimizing low level code.

PYTHON

I have 5 years Python experience, with a small amount in industry. I occasionally use Python for small web servers (Django or Flask) and command line tooling.

JAVASCRIPT

I have written a lot of Javascript, mostly during my time at university. I have experience in ES5, ES6, Typescript and Coffeescript. I have also used frameworks such as AngularJS, Angular and React, using tools such as NPM, Bower, Gulp and Webkit.

CATEGORY THEORY

I recently learnt basic category theory which helped me understand programming from a mathematical perspective. I learnt about various abstractions such as Kleisli Arrows, Free Monads and Natural Transformations.

FUNCTIONAL PROGRAMMING

I am learning more about functional programming all the time. I apply this knowledge to all programming fields, not just in functional programming languages. It has helped me to produce clean reusable pieces of code with a clear separation of behavior, data and effects.

TESTING

I'm competent with all testing and use different testing methods depending on the situation. My knowledge covers unit, integration, interactive and acceptance testing, as well as benchmarking.

CODE REVIEW

I am experienced with code review, both on Github for reviewing pull requests, and Gerrit for internal code review.

IDE'S AND EDITORS

- IntelliJ IDEA
- Pycharm
- Webstorm
- VsCode
- Atom

Operating Systems

I primarily use Linux (NixOS or Ubuntu), but also have experience in Windows and OSX.

Version Control

I am a competent git user and have written many programs interacting with Git repositories. I am also familiar with git-flow and use advanced git techniques to ensure my history is clean and can be effectively analyzed later.

Open Source

My occupation is also my hobby, in my free time I contribute to the open source community. I often write PR's for libraries, assist with support on Gitter and help with issue management.

Scalagen – Author

[Link](#)

I authored this library primarily because the existing scalameta/paradise library was deprecated, and scalamacros/paradise is not ide or user friendly. I manage everything from issues to design and implementation.

Elysium - Author

[Link](#)

Elysium was an exploration of what could be accomplished with Macro Annotations. All Elysium macros are strongly typed and became the foundation of scalagen's API.

Scalameta – Maintainer

[Link](#)

A huge center point for Scala's tooling which exists primarily as an AST manipulation library. I am the co-author of the scalameta-contrib module, built to simplify interactions with scalameta.

Scalameta/Paradise - Maintainer

[Link](#)

Macro library for Scala. Now deprecated in favor of scalameta/scalagen (annotation macros) and scalacenter/macros (def macros). I have written a large portion of the annotation processing logic used to ensure feature parity with scalamacros/paradise.

Experience

Software Developer - Electric Memory IT

2015 - PRESENT

Contracted to: Process System Enterprise, London, England

EMIT Office Location: Palmerston North, New Zealand

Languages: Java/Scala

I have been a part of many projects at PSE/EMIT. They have challenged me and allowed me to grow as a developer.

NEW LANGUAGE ENGINE

Using Scala for AST and validation logic, and Antlr4 as our parser and lexer, I collaborate in a team of three to build a fast, immutable, threadsafe and storage efficient language module. I have written most of the Antlr grammars, the parsing logic and a large portion of the language model. Whilst the rest of the team worked on integration with existing code.

- Scala
- Antlr4
- Antlr2
- Java
- C++

MAVEN TO GRADLE MIGRATION

I led the Gradle migration project. Our build system is rather complex, we have multiple code generation steps, multiple JVM languages being used, extra post-compile tasks (obfuscation and encryption) and multiple repositories. The build was designed to be modular via Gradle plugins. I had to manage other developers such as the CI and Kernel teams. The build had to run fast and support both Windows and Linux.

- Gradle
- Groovy
- Java

FLOWSHEET ROUTING

Flowsheet routing is the act of ensuring the connection between nodes on a flowsheet are orthogonal. For user-generated projects this could happen on project load and could trigger up to 8 hour GUI freezes. I moved the route calculations off the event dispatch thread (Swing's GUI thread), ensuring asynchronous execution. I also altered all routing actions so they would be undoable, parallelizable and cancellable.

- Swing
- Java
- Threading

Salesman - Dick Smith Electronics

2014-2015

Palmerston North, New Zealand
Part time

Butchers Assistant - Countdown Supermarkets

2012-2013

The Valley, New Plymouth, New Zealand
Part time

Checkout Operator - Countdown Supermarkets

2009-2012

The Valley, New Plymouth, New Zealand
Part time

Fruit Harvester - Paradise Valley Berry Farm

2008-2009

Bell Block, New Plymouth, New Zealand
Seasonal

Conferences

I enjoy furthering my knowledge through research and conferences, allowing me to communicate new ideas to my team for possible implementation. In the past I have given a lightning talk at KiwiPycon, which is my way of contributing to the community. I also enjoy networking with a variety of like-minded people from all IT backgrounds.

- Kiwicon X
- 2x Kiwi Pycon
- NZJSCon
- linux.conf.au 2018

Community

I attend as many talks and events as possible. In the past I have gone to events organized by Massey University, IT Professionals of New Zealand (ITPNZ) and the Palmerston North Software Development Meetup Group.

Education

Bachelor of Information Science/ Massey University

I completed my compulsory papers in 2015, and currently finishing electives by distance.

Project papers:

- Capstone Project
 - Source is available at <https://github.com/DavidDudson/Capstone>
- Special topic
 - Source is available at <https://github.com/DavidDudson/FarmManagement>

References

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