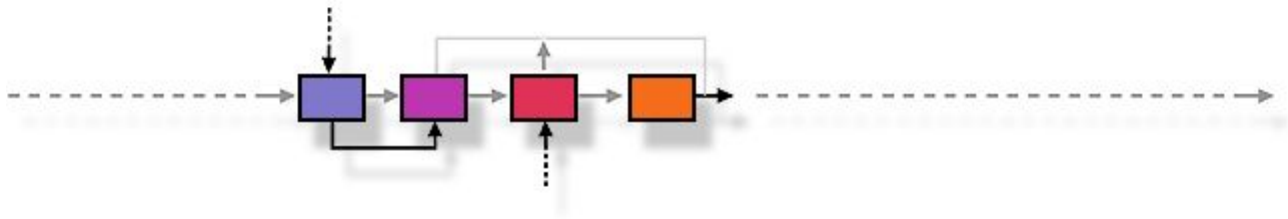

VisRec JSR #381 Review

May 15, 2019

Agenda

- Goals
- JSR Process
- Implementation Notes
- Issues
- Questions, Discussion, Next steps

Agenda

- **Goals**
- JSR Process
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Overall Goal

Promoting Java as a first-class citizen in AI/ML

Create a high-level standard API for object recognition using machine learning that is familiar to and useful for Java Developers

Why It’s Important for Java SE and Devs

- Machine Learning - a huge industry trend
- Visual Recognition (VisRec) - important subset of ML
- Java ML APIs need to be “Java Developer Friendly”
- Standard APIs offer portability and maintenance benefits

- High-level abstractions for sustainable development of products
- Protect developers from lower-level changes (and provide hooks allowing lower-level access)
- Building custom ML models/Image Classifiers (not just using pre-trained Classifiers)

Issues with Existing Offerings

- Disparate OSS/proprietary ML engines and toolkits
- Different image classes, algorithms and implementations, often with native dependencies
- Each has different set of APIs
- Reduced Portability
  - Image Recognition Apps
  - Lower-level Bitmap, Image, etc, pixel-level manipulation
- Some Toolkits very complex for Avg Java Developer
- Most Toolkits are not Java-friendly (C flavor)

Java Community Process

Agenda

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History (necessary?)

- List the significant dates in the history of the JSR.
  - Submittal: April 2017
  - EDR: June 2018
  - Public Review: Early June 2019

Technical scope and features

- Provide a high-level summary of technical features.
  - No more than 2 or 3 slides.
  - 1 slide: architecture
  - 2 slide: design - class diagram
  - 3 slide: example usage
  - 4 slide: comparison with existing libs

Zoran - TBD

The Expert Group

- Zoran - University of Belgrade
- Sandhya - (former) IBM, (current) Microsoft
- Frank - NYJavaSIG

- Status meetings (zoom) every Tuesday
  https://groups.io/g/visrec/topics
- Groups.io mailing list (visrec) and calendar

Contributors and Advisors

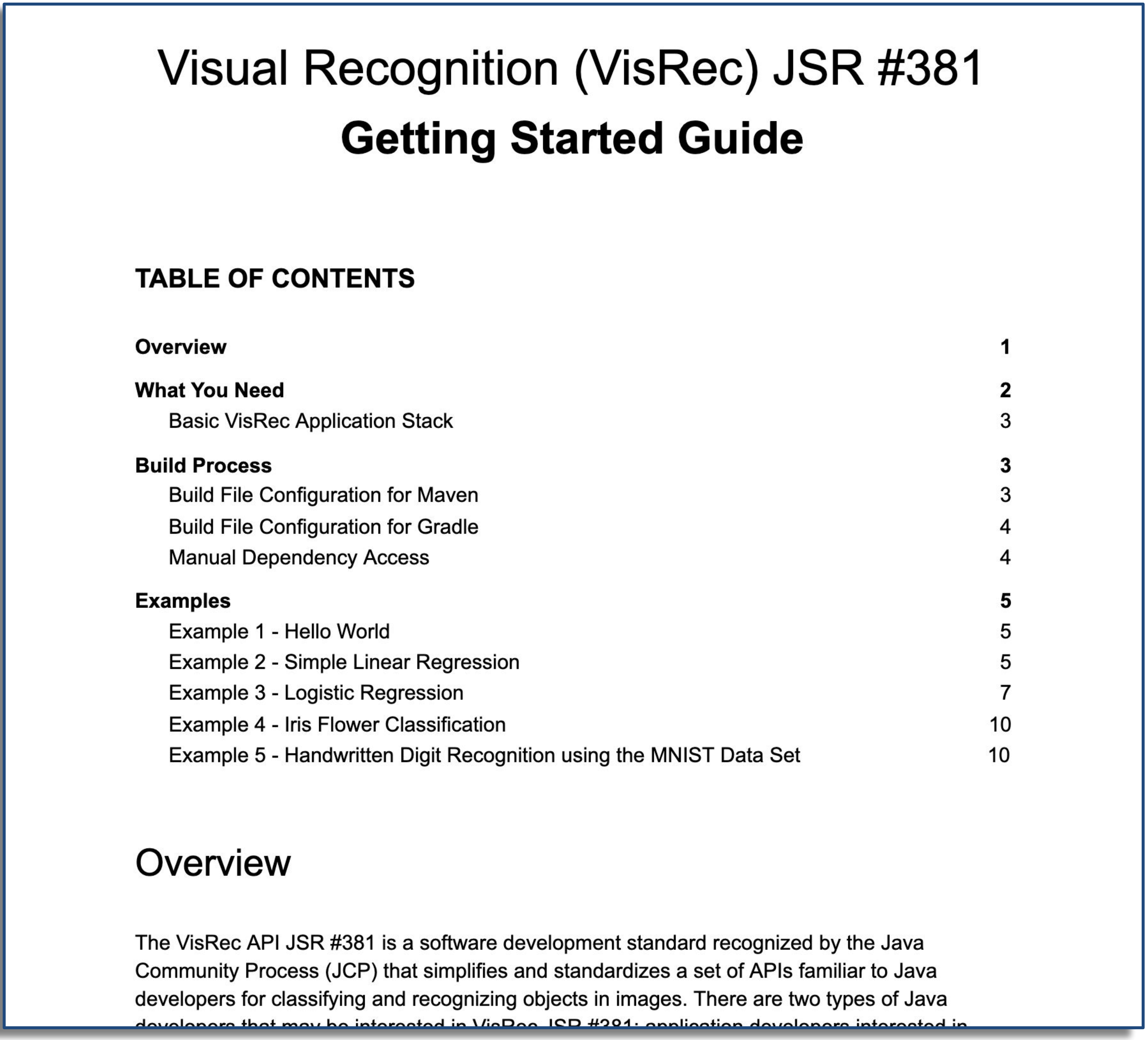
- Constantin Drabo
- Amit Nagesh
- Marissa Staller
- Eric Bruno
- Anakar Parida
- Jyoti Buddha
- Guillaume Laforge
- Ed Burns
- James Weaver

Other Docs, Presentations, etc

- Examples - 4-5 working examples
  https://github.com/JavaVisRec/jsr381-examples
- Getting Started Document

- JavaOne/CodeOne panel
  Heather/Sandy/Frank/EdBurns
- Intro to ML for Java Devs - Zoran/Frank - CodeOne
- Visual Recognition - Sandy/Frank - Devoxx US

Java Community Process



Visual Recognition (VisRec) JSR #381

Getting Started Guide

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Overview

The VisRec API JSR #381 is a software development standard recognized by the Java Community Process (JCP) that simplifies and standardizes a set of APIs familiar to Java developers for classifying and recognizing objects in images. There are two types of Java developers that may be interested in VisRec JSR #381: application developers interested in

Collaboration with Community Groups

- Kevin - In contact with NLJUG (Dutch JUG) to organize sessions nationwide to adopt the JSR once there are multiple visual recognition examples implemented using the API and RI.
- Frank - NYJavaSIG - waiting for 1.0 to actively engage

Java Community Process

Agenda

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Implementations

- How many implementations (apart from the RI) exist?
  - One more in progress: Neuroph educational neural network framework with support image recognition

Schedule

- June 1 - Beta release
- Dec - 1.0 release

RI and TCK development

- The TCK and RI are being developed simultaneously in a TDD (test-driven development) working environment as much as possible to keep the RI compliant with the TCK at any time.
- The API, RI, TCK are being developed by two active committers of which one is a Spec Lead of the JSR:
  - Zoran Sevarac (Spec Lead)
  - Kevin Berendsen (Contributor)

RI and TCK development

- TCK Runner (consists of the TCK and RI):
  - https://github.com/JavaVisRec/jsr381-tck-ri
- Source-code repositories:
  - API: https://github.com/JavaVisRec/visrec-api
  - RI: https://github.com/JavaVisRec/visrec-ri
  - TCK: https://github.com/JavaVisRec/visrec-tck
  - Examples: https://github.com/JavaVisRec/jsr381-examples

RI and TCK development

- Snapshots published in Sonatype:
  - API: https://oss.sonatype.org/#nexus-search;quick~visrec-api
  - RI: https://oss.sonatype.org/#nexus-search;quick~visrec-ri

Participation and Transparency

- JSR page on JCP.org
  - https://jcp.org/en/jsr/detail?id=381
- JSR project website

  https://github.com/JavaVisRec

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