TripCo - Welcome to your Internship!

A mobile web application development startup that quickly produces reliable, high quality solutions using Agile software engineering practices.

CEO / CTO / Manager / Product Owner / Instructor
Dave Matthews

Directors / Mentors / Teaching Assistants
Gareth Halladay, Kartik Khurana, Tanner Johnson, Scott Swensen
Be an Agile organization

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- individuals and interactions over processes and tools,
- working software over comprehensive documentation,
- customer collaboration over contract negotiation,
- responding to change over following a plan.

That is, while there is value in the items on the right, we value the items on the left more.

Focus on Software Engineering

- The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software.

## Build process maturity at level 3

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Organization</th>
<th>Project</th>
<th>Engineering</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>• Organizational Performance Management</td>
<td></td>
<td></td>
<td>• Causal Analysis and Resolution</td>
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<tr>
<td>4</td>
<td>• Organizational Process Performance</td>
<td>• Quantitative Project Management</td>
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<tr>
<td>3</td>
<td>• Organizational Process Definition</td>
<td>• Integrated Project Management</td>
<td>• Requirements Development</td>
<td>• Decision Analysis and Resolution</td>
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<tr>
<td></td>
<td>• Organizational Process Focus</td>
<td>• Risk Management</td>
<td>• Technical Solution</td>
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<td></td>
<td>• Organizational Training</td>
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<td>• Product Integration</td>
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<tr>
<td>2</td>
<td>• Requirements Management</td>
<td>• Project Planning</td>
<td>• Requirements Development</td>
<td>• Configuration Management</td>
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<tr>
<td></td>
<td>• Project Monitoring and Control</td>
<td>• Supplier Agreement Management</td>
<td>• Technical Solution</td>
<td>• Process and Product Quality Assurance</td>
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<tr>
<td></td>
<td>• Supplier Agreement Management</td>
<td></td>
<td>• Product Integration</td>
<td>• Measurement and Analysis</td>
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</tbody>
</table>

### Internship Plan – 15 weeks

<table>
<thead>
<tr>
<th>Sprint</th>
<th>Processes</th>
<th>Tools</th>
<th>Technology</th>
<th>TripCo Epics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• Configuration Management</td>
<td>• GitHub, Maven, Travis-CI</td>
<td>• Bootstrap 4 HTML</td>
<td>• Make a mobile resume</td>
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<tr>
<td></td>
<td>• Continuous Integration</td>
<td>• ZenHub, CodePen</td>
<td>• JavaScript ReactJS</td>
<td>• Calculate geographic distances</td>
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<tr>
<td></td>
<td>• Project Management</td>
<td>• Scrum, Planning Poker</td>
<td>• Java Spark REST API/HTTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Scrum, Planning Poker</td>
<td></td>
<td>• JSON, SVG</td>
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<tr>
<td>2</td>
<td>• Test Driven Development</td>
<td>• Google style guide IntelliJ</td>
<td>• Java Spark REST API/HTTP</td>
<td>• Plan shorter trips</td>
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<tr>
<td></td>
<td>• Black Box Testing</td>
<td>• WebStorm</td>
<td>• JSON, SVG</td>
<td>• Modify destination list</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Show useful information</td>
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<tr>
<td>3</td>
<td>• Clean Code</td>
<td>• Code Climate</td>
<td>• SQL MariaDB</td>
<td>• Plan shorter trips</td>
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<tr>
<td></td>
<td>• Code Coverage</td>
<td>• Emma, Jacoco, ...</td>
<td></td>
<td>• Add more information</td>
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<tr>
<td></td>
<td>• White Box Testing</td>
<td></td>
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<td>• Map operations</td>
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<td>4</td>
<td>• Code Smells</td>
<td>• KML</td>
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<td>• Plan shorter trips</td>
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<tr>
<td></td>
<td>• Refactoring</td>
<td></td>
<td></td>
<td>• Plan trips faster</td>
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<tr>
<td>5</td>
<td>• Peer Reviews</td>
<td>• Concurrency</td>
<td></td>
<td>• Finalize your resume</td>
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<td>• Inspections</td>
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<td></td>
<td>• Metrics</td>
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Sprint 1 - New Intern Orientation

• Focus on Level 2 software engineering processes
• Introduction to processes, supporting tools, and some technologies used in our solutions
• Teambuilding exercises
• Build a web résumé
• Build a distance calculator web application
• Demonstrate your work to staff

Team Grade for Sprints

• Process (50 pts)
  – Epics, tasks
  – Commits, pull requests
  – Build success
  – Tests, coverage
  – Technical debt ratio

• Solution (50 pts)
  – Deployment (to server)
  – Release (GitHub)
  – Report (GitHub)
  – Demonstration (in class)
Individual Grades

• Sprints - 50%
  – each sprint - 10%
  – individual score = team score * %contribution

• Exams - 35%
  – Final - 20%
  – Midterm - 15%

• Activities - 15%

• There is no grace period or LATE. It is done or it is not.

Online Résumé

Education
  Bachelor of Science, Computer Science, 20xx, GPA
  – Completed Scrum-based team project that created a mobile, single page web, trip planning application interacting through REST APIs with a SQL database and optimization tools.

Skills
  – Scrum, Test Driven Development, Configuration Management, Continuous Integration, Unit and Coverage Testing, Clean Code, Inspections
  – GitHub, Maven, TravisCI, Zenhub, JUnit, Emma, Code Climate
  – Bootstrap 4, ReactJS, Java Spark, MariaDB, SQL, JSON, SVG, KML
Other things you should learn...

- How to manage time
- How to solve problems
- How to learn
- How to ask for help
- How to help others
- How to lead
- How to follow

... in a team

Expectations

- Lecture attendance is REQUIRED.
  - No textbook!
  - Team meetings in class each lecture.
- Sprints should be done incrementally 6-9 hours / week.
  - Don’t procrastinate - no big bang.
  - Teamwork is the key.
- Make visible contributions (GitHub, Zenhub, ...)
- Talk to me early if you or your team is having a problem.
- Tell me about university activities, life events, documented illnesses and disabilities, etc. that affect ability to contribute.
Canvas - due tomorrow!

• Identify pairs
• Submit your GitHub username
• Submit your personality type
• Submit your skills survey