



Put a little
Backbone in
your
WordPress



Outline

- ➔ Backbone is *Awesome*
- ➔ Includes Underscore.js, also awesome
- ➔ WordPress makes Backbone easier

Backbone is Awesome

Philosophically, Backbone is an attempt to discover the minimal set of data-structuring (models and collections) and user interface (views and URLs) primitives that are generally useful when building web applications with JavaScript

Backbone Basics

- Prototypes: Models, Collections, Views
- Plus: Events, Routes, History
- Getting and Saving Data:
 - Bootstrapping
 - AJAX/AJAJ
 - JSON REST API

Why use Backbone?

- Highly interactive pages - front end or admin
- Single page application with more than one state
- Helps keep your code maintainable
- Gets your truth out of the DOM
- Really simple, well documented, easy to understand
- Modular - use what you need
- Bundled with WordPress

Some Examples

- <http://backbonejs.org/#examples>
- Rdio, Hulu, Gawker, Foursquare, Disqus, Khan Academy, Basecamp, Stripe, AirBnB, Pandora, Code School, CloudApp, Trello and on and on...
- Backbone in WordPress core...

Backbone in WordPress Core

➤ media

➤ revisions

➤ themes

➤ what next?



Underscore is Awesome

- Collections: `_.map`, `_.where`, `_.pluck`, `_.filter`
- Functions: `_.memoize`, `_.throttle`, `_.debounce`, `_.once`, `_.delay`, `_.defer`
- Utility: `_.pick`, `_.extend`, `_.defaults`
- <http://underscorejs.org/>

Underscore Examples

```
$( document ).on( 'keyup', _.throttle( function( e ){  
  self.keyPress( e );  
}, 125 ) );
```

```
gridmodels = _.filter( this.backbonePeople.models,  
  function( theModel ) {  
    return ( -1 !== theModel.get( 'title' )  
      .toLowerCase().indexOf( search ) );  
  } );
```

Underscore Examples

```
wp.template = _.memoize(function ( id ) {  
  var compiled,  
      /*  
       * Underscore's default ERB-style templates are  
       * incompatible with PHP  
       * when asp_tags is enabled, so WordPress uses Mustache-  
       * inspired templating syntax.  
       *  
       * @see trac ticket #22344.  
       */  
      options = {  
    evaluate:    /<#([\s\S]+?)#>/g,  
    interpolate: /\{\{\{([\s\S]+?)\}\}\}/g,  
    escape:      /\{\{([\^\\]+?)\}\}(?!\\)/g,  
    variable:   'data'  
  };  
  
  return function ( data ) {  
    compiled = compiled || _.template( $( '#tmpl-' + id ).html()  
      , null, options );  
    return compiled( data );  
  };  
};
```

WordPress and Backbone

➤ WordPress JSON REST API

➤ wp_localize_script

➤ wp_ajax_(action)

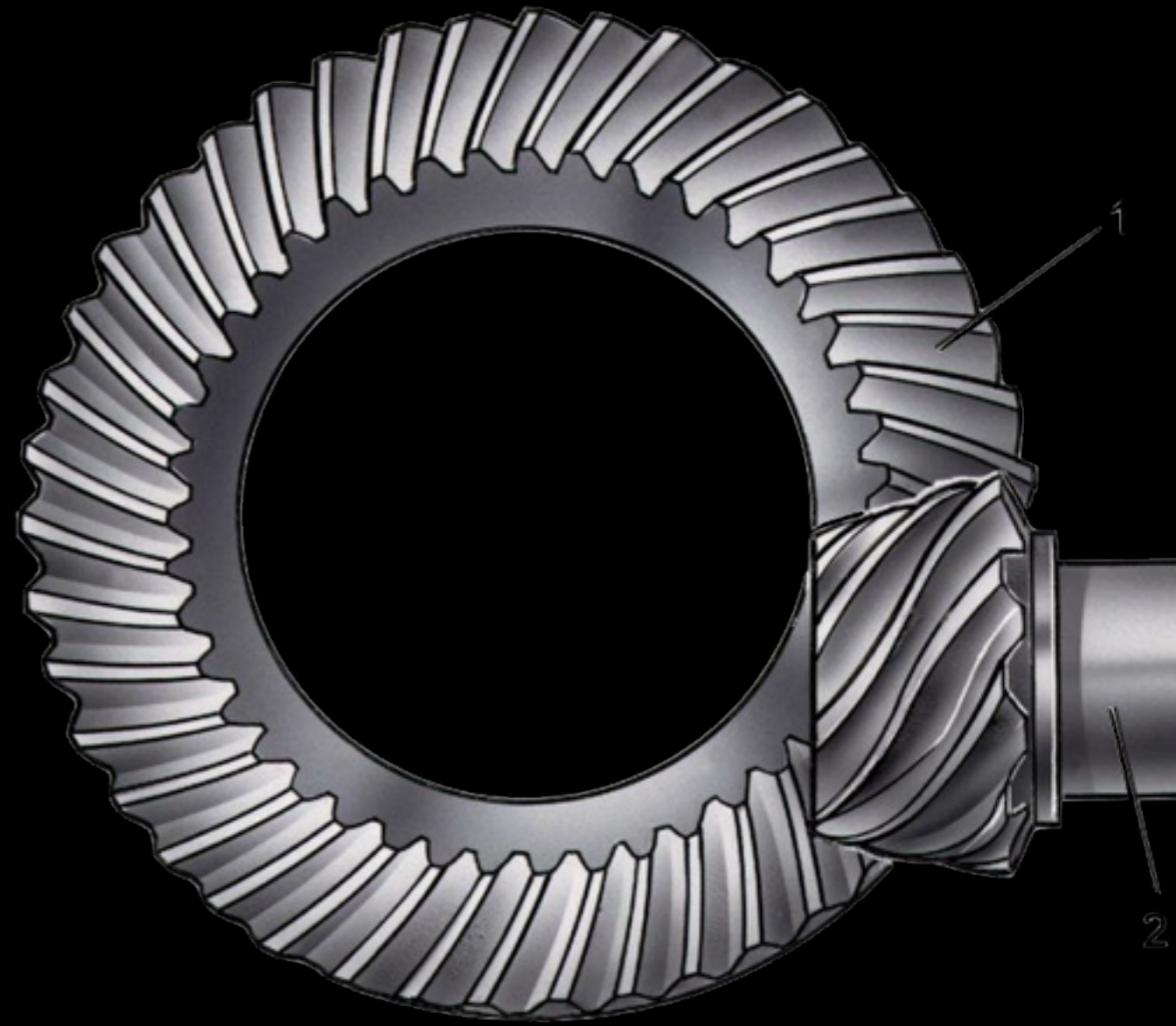
➤ wp_create/verify_nonce

➤ wp_remote_get

➤ get/set_transient

➤ wp_send_json_success/error

➤ wp.template, wp.Backbone.view/subview



Coding Backbone is fun!



Coding Backbone is fun!

- annotated source code

backbonejs.org/docs/backbone.html

- simple and extendable - meant to be flexible

- clean structure, templates, code data binding



Considerations

➤ Accessibility

















➤ nojs

➤ Internationalization

Building a Demo App

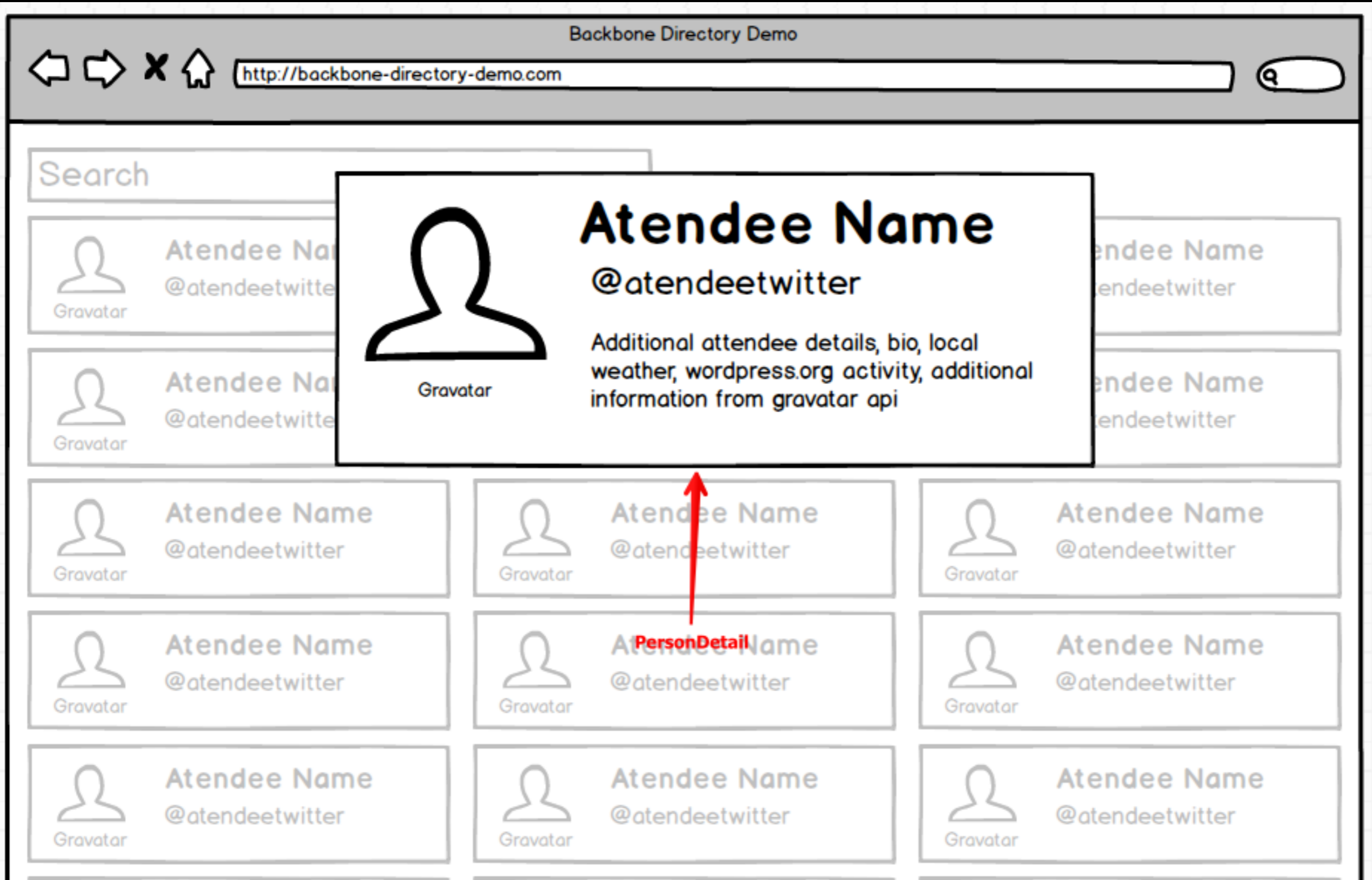
- ➔ Backbone driven plugin to display user directory
- ➔ Grabs data by scraping WordCamp attendee page
- ➔ Data stored in CPT, passed via JSON REST API

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<https://github.com/adamsilverstein/backbone-directory>

Mockup!



Structure

➔ **Model:** Person

➔ **Collection:** PersonCollection

➔ **Views:** PersonDisplay, PersonDetail, Search Bar, Grid

➔ **Router:** routes: '?details=:name': , '?search=:search':

Person Model

```
/**  
 * The base person model  
 */  
var BackbonePerson = Backbone.Model.extend(),
```

Person Collection

```
/**
 * Collection of people
 */
BackbonePersonCollection = Backbone.Collection.extend( {
  search: '', /* the current search string */
  searchFor: function( search ) {
    this.search = search;
    this.trigger( 'change' );
  }
} ),
```

Views

```
/**
 * The person display view - display the card of a single person
 */
BackbonePersonDisplay = Backbone.View.extend({
  template: wp.template( 'backbone_person' ),
  el:       '#backbone_card',

  initialize: function() {
    this.listenTo( this.model, 'change', this.render );
  },

  render: function() {
    this.$el.html( this.template( this.model.attributes ) );
    return this;
  }
});
```

Router

```
— /* ROUTER */  
—  
— /**  
— * Handle routing for the application  
— *  
— **/  
— BackboneRouter = Backbone.Router.extend({  
—  
— routes: {  
—   '?details=:name': 'openbackbonePerson',  
—   '?search=:search': 'performSearch'  
— },  
—
```

Fetch

```
/**
 * The main application object
 */
BackboneDirectoryApp = {

  pagelimit: 80,
  loadedCount: 0,

  fetch: function( offset ) {
    this.backbonePeople.url = '/wp-json/posts?filter[posts_per_page]=' +
      this.pagelimit +
      '&filter[order]=ASC&filter[offset]=' +
      offset +
      '&type=backbonedirectory';

    return this.backbonePeople.fetch( { remove: false } );
  },
}
```

PHP

```
// Attach the meta data to the WP JSON API return
add_filter( 'json_prepare_post', function ( $data, $post, $context ) {
    $data['usermeta'] = array(
        'imgsrc' => get_post_meta( $post['ID'], 'imgsrc', true ),
        'emailhash' => get_post_meta( $post['ID'], 'emailhash', true ),
        'twittertxt' => get_post_meta( $post['ID'], 'twittertxt', true ),
        'atendeeUrl' => get_post_meta( $post['ID'], 'atendeeUrl', true ),
        'currentLocation' => get_post_meta( $post['ID'], 'currentLocation', true ),
        'aboutMe' => get_post_meta( $post['ID'], 'aboutMe', true ),
    );
    return $data;
}, 10, 3 );
```

```
// Allow offset parameter
// @todo limit the filter to just our cpt
add_filter( 'json_query_vars', function( $vars ){
    array_push( $vars, 'offset' );
    return $vars;
});
```


Fetch

[/wp-json/posts?](#)

[filter\[posts_per_page\]=80&filter\[order\]=ASC&](#)

[filter\[offset\]=0&type=backbonedirectory](#)

```
▼ {
  ID: 141,
  title: "Adam Silverstein",
  _status: "publish",
  date_gmt: "2014-11-11T21:11:06",
  modified_gmt: "2014-11-11T21:11:06",
  ▼ meta: {
    ▼ links: {
      self: http://wpdev.localhost/wp-json/posts/141,
      author: http://wpdev.localhost/wp-json/users/1,
      collection: http://wpdev.localhost/wp-json/posts,
      replies: http://wpdev.localhost/wp-json/posts/141/comments,
      version-history: http://wpdev.localhost/wp-json/posts/141/revisions
    }
  },
  ▼ usermeta: {
    imgsrc: http://1.gravatar.com/avatar/fddb6c3e1c3d971aa732b9346aeb433?s=96&d=http1.gravatar.comavatarad516503a11cd5ca435acc9bb6523536s96&r=G,
    emailhash: "fddb6c3e1c3d971aa732b9346aeb433",
    twittertxt: "@roundearth",
    attendeeUrl: http://tunedin.net,
    currentLocation: "Hotchkiss, CO",
    aboutMe: "WordPress Rockstar. Farmer, mbira player, father, river rafter, traveler."
  },
  terms: [ ]
},
▼ {
  ID: 142,
  title: "Adam Sink",
  content: ""
}
```

Templates - Person

```
<script id="tmpl-backbone_person" type="text/html">
  <div class="backbone_person-card" id="backbone_person-{{ data.ID }}"
    tabindex=0>
    <div class="backbone_person-gravatar">
      
    </div>
    <div class="backbone_person-name" style='width:190px; padding-
      left:70px;'>
      <span>{{ data.title }}</span>
    </div>
    <div class="backbone_person-twittertxt">
      <span>{{ data.usermeta.twittertxt }}</span>
    </div>
  </div>
</script>
```

Templates - Person Detail

```
<script id="tmpl-backbone_person_detail" type="text/html">
  <div class="backbone_person_detail-card">
    <div class="backbone_person_detail-gravatar">
      <img src='http://www.gravatar.com/avatar/{{ data.usermeta.
        emailhash }}?s=128' width="128" height="128">
    </div>
    <div class="backbone_person_detail-twittertxt">
      <a href="{{ data.usermeta.twitterurl }}" target="_blank">
        <span>{{ data.usermeta.twittertxt }}</span>
      </a>
    </div>
    <div class="backbone_person_detail-name">
      <span>{{ data.title }}</span>
    </div>
    <div class="backbone_person-currentLocation">
      {{ data.usermeta.currentLocation }}
    </div>
    <div class="backbone_person-aboutMe">
      {{ data.usermeta.aboutMe }}
    </div>
  </div>
</script>
```

Result



Adam Silverstein

@roundearth



**Adam
Silverstein**

Hotchkiss, CO

WordPress Rockstar. Farmer, mbira player, father, river rafter, traveler.

[@roundearth](#)

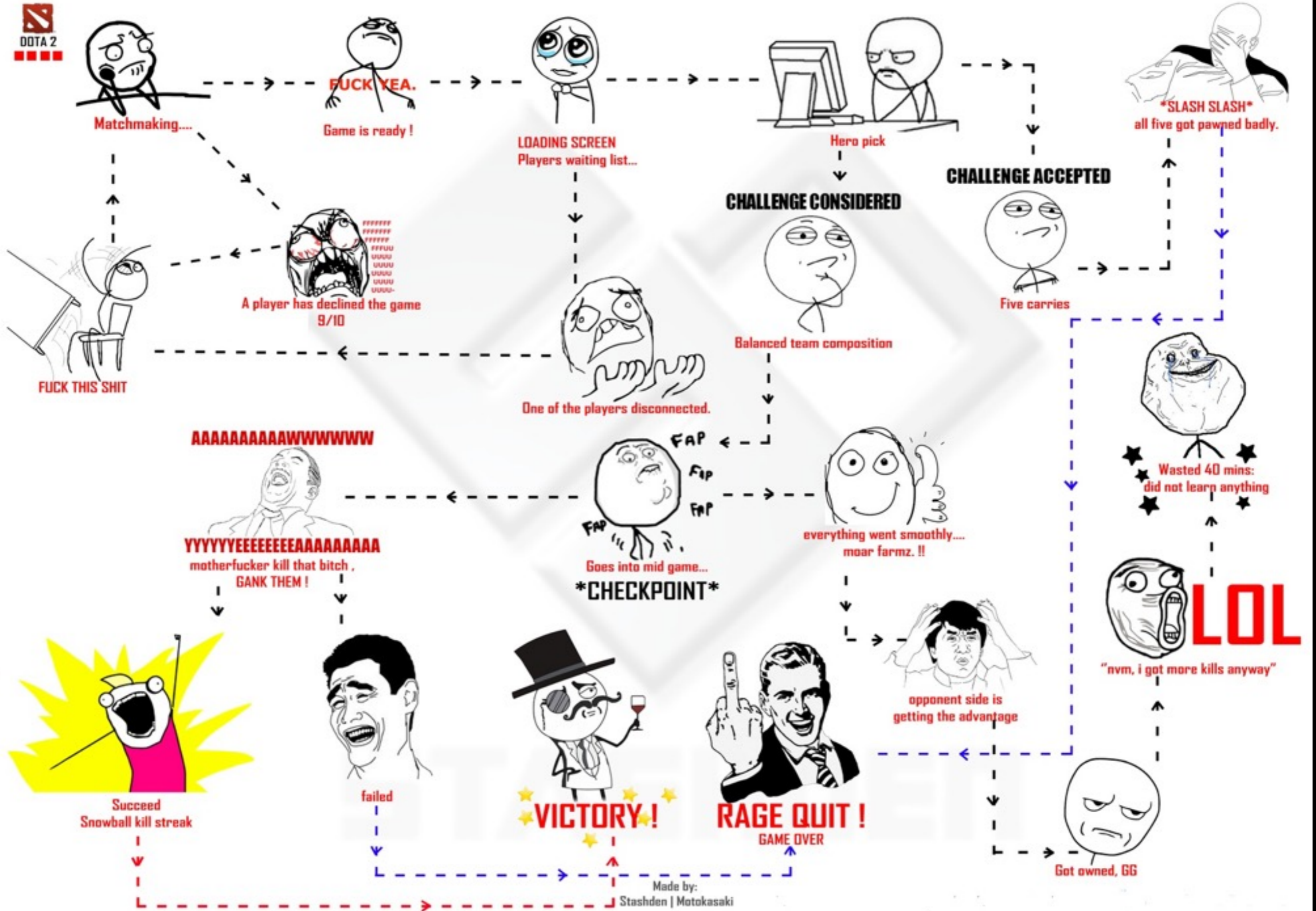
@andrewy

Start Using Backbone

- Wireframes
- Models, Collections
- Views: templates/rendering
- Data: bootstrap data, new data, updates
- Events
- Routing, History



Should You Use Backbone?



Resources

- Backbone - <http://backbonejs.org/>
- Underscore - <http://underscorejs.org/>
- Code School Backbone course - <https://www.codeschool.com/paths/javascript#backbone-js>
- Developing Backbone Applications - <https://www.codeschool.com/paths/javascript#backbone-js>
- JSON REST API - <https://wordpress.org/plugins/json-rest-api/>
- TLC Transients - github.com/markjaquith/WP-TLC-Transients
- wp.Backbone.View/Subview - <http://wordpress.tv/2014/11/03/mark-jaquith-backbone-views-in-wordpress/>
- WP JSON REST API - <https://github.com/WP-API/WP-API>



About

- Save assembly code onto cassettes
- Good at JavaScript & bug squashing
- Love contributing to WordPress Core
- Revisions Component Maintainer
- Managing Engineer at 10up

