**Please complete the following questionnaire. There are no wrong answers, we will be using these to get a sense of your skills and experiences.**

## Development Specific

1. Please describe your experience for each one of the following topics.

|  |  |
| --- | --- |
| OOP (Object Oriented Programming) in your strongest language | I have development experience of Python Desktop application, iOS app and website based on JavaScript or PHP. |
| Experience with Python/Ruby/JavaScript/Java/Scala | Python is used for graphic monitor application, cooperated with Matlab, with numpy, scipy, and qtpy. JavaScript is used for website development, including front and back-end, like MEAN |
| OOD (Object Oriented Design) (i.e. design patterns) | The most two design patterns I have used in my experience are singleton and factory. |
| Concurrent programming |  |
| Distributed programming | I have built a “Beowulf” cluster using raspberry pi |
| Relational and NOSQL databases | Maintain Oracle database as intranet manager in first work experience. I also have used LAMP and MEAN, so I also have experience on MySql and MongoDB |
| Caching and content delivery networks (CDN) |  |
| WEB applications development | Web Development of WHO and BrainCo website based on LAMP and MEAN. |
| Web frameworks | Laravel, AngularJS, NodeJS, ExpressJS, ReactJS |
| Network programming | Rest API design |
| Use of Apache projects |  |

## Development Process / Methodology

1. Some goals of good quality software are: simplicity, maintainability, stability, extensibility and performance. Which best practices, strategies, tools and technologies do you regularly employ (or would you like to) to achieve these goals in your source code?

|  |  |
| --- | --- |
| Simplicity | Third-part library |
| Maintainability | Establish a complete log system, distributed stored and real-time update |
| Stability | Stable code include stable exception and error handling mechanism. |
| Extensibility | Module design, separate logic layer, business layer, and presentation layer. |
| Performance | Factory and singleton patterns can reduce memory pressure, and try to reduce IO operations |

Continuous learning and thought leader

1. What software and/or industry news, trends, happenings are you interested in, if any? E.g., new Java 9 features, other programming languages, technologies, etc.

I am very interested in distributed computing, data mining, blockchain, and smart contact. I have built a “Beowulf” cluster using raspberry pi. I like Linux OS, which I use in my laptop, and open source software, there are a lot challenge and I enjoy to solve them. I have read a book of Data mining by Ian H. Witten and another book about blockchain and smart contract. These new knowledge thrill me.

1. What conferences, meetups, MOOCs, talks have you attended (or led) in the past 24 months?

2016 CES, and 2016 summer road show in china with other 11 startup groups from Boston.

1. If given the chance for a one hour meeting with any person, dead or alive, who would it be and what would you ask them?

Geoffrey Hinton from University of Toronto.

I wish I could ask him and learn more about his “Neural Computation and Adaptive Perception” program.

## Take home development

1. For each part listed below, create a running software application (Python or JavaScript based). Use any tools you find useful to create high quality, usable systems.

Testable items:

1. Command line execution (main class / method)
2. Reusable class / components
3. Build tool usage (your choice, if required)
4. Test coverage
5. Reading external resources
6. Parse a file
7. Read one JSON map per line
8. Handle exceptions
9. Graceful termination
10. Documentation, in code, or meta documentation

Documentation is in code and README.md file.

### DeepLearni.ng Practical Coding Test

For each part listed below, create a running (python or JS) software application. Use any tools you find useful to create a high quality, usable system.

Please submit a zip file containing your full source code along with build instructions on the deadline.

#### Command line / Library

Build a small custom application that recursively reads any user’s FB friend list (to ONLY the 2nd degree) and proposes who the influencer(s) in the graph may be.

You will have to decide on what “influencer” may mean in this context, and explain in documentation.

The output should be user\_id : confidence (where confidence is some measure of ranking influencers vs each other)

#### REST service

Create a REST service that exposes two endpoints that calls the component created above:

##### GET:/influencers?fb\_id=<some id>

Returns a list of all of the influencers’ ids with a confidence rating, one per line.

##### GET:/influencers/most\_influential

Returns (all the data) from the influencer who is ranked highest by your measure.