Written interview questions for Web Developer at Canonical

Web engineering experience

1. **What skill or knowledge have you acquired in the past year that has been particularly helpful? What motivated you to learn it? What has the impact been for you and your team?**
Over the past year I've graduated my PhD degree. The process and the progress of writing of the dissertation powered me with one of the most important personal characteristics, which is skill and knowledge as well, at least, from my perspective, and it is the will. Will to plan, work on a huge project almost alone, at the same time with a responsibility to provide something new, will to believe in myself till the end and will to focus on the target. From technical perspective, I would like to mention the [tool](#) I developed. On the other hand, over the past year, and still, I'm in love with the idea of making something that can help people, the result of which are my open-source contributions. Would like to mention some updates in my mindset in IT as well, now I'm redefining my interests in it, trying to think from business perspective, not just deep diving into software and hardware.

2. **Describe your experience of web programming - JavaScript, Typescript, React, CSS and Python in particular.**
I have 5+ years of experience in front-end development. Worked on projects of various industries (e.g. health insurance, learning, psychology, mining, website bulding platforms) and applied different technologies (React, Svelte, Next.js, React Native, etc.). Had a chance to work with jQuery as well). Have an experience not only of mentoring, reviewing, organizing front-end learning modules for the high school students, participating in React guiding projects in company-level, refactoring, restructuring and redesigning websites, diving into js bundlers, data visualization and browsers.
Being a front-end heavy one, I had opportunity to work with back-end technologies as well (PHP/Laravel, Node.js). Have implemented api endpoints,

constructed simple datasets, worked with authorization/authentication, did a variety of third-party integrations (with Facebook, Google, Outlook, Eventbrite, etc.).

3. **Describe your experience building large systems with many services - web front ends, REST APIs, data stores, event processing and other kinds of integration between components. What are the key things to think about in regard to architecture, maintainability, and reliability in these large systems?**

   Most of the technologies are listed in the answer below. Just some key points I follow when designing a new software or refactoring it:

   * The success of component-based architectures depends on how we organize data storing/updating/consuming. Component tree is sensitive to store updates. In this context, one of my loved techniques, which I proved myself in practice is state normalization. Moreover, I have a little about it on medium.

   * Well-typed system, where each layer of the application has its interfaces, even APIs. It's not only generates a proxy documentation of the project, but provides an incredible developer experience as well.

   * Well-documented codebase, which includes proper .md files, comments (JSdoc and not only), AI instruction files if need.

   * Automated tests: in long-term, they save much more time for the team, than it costs.

   * Simple, predictable and reliable processes, meaning the flow of tasks. Special care about ci/cd pipelines is crucial for it.

Education

1. **How did you fare in high school mathematics, physical sciences and computing? Which were your strengths and which were most enjoyable? How did you rank, competitively, in these subjects?**

   In high school I was a straight-A student, including the subjects there are

mentioned in the question. I was enjoying Math at all, but I remember I was really enlightened by geometry, then, in university, I was admired with it when we were exploring geometry in the context of probability theory. In high school I had a specific interest in chemistry as well. Was proposed as a candidate for different Olympiads by my school, participated and had achievements.

2. **In high school, what leadership roles did you take on?**

   Have managed some internal class-level and school-level groups, have been a captain of school soccer team).

3. **Which degree and university did you choose, and why?**

   Bachelor was in mathematical methods and modelling. Enjoyed almost all the subjects there – mathematical analysis, trigonometry, geometry, probability theory, mathematical modelling, discrete mathematics, math finance, statistics, philosophy, etc. Participated in many seminars and trainings. Then, masters I get in macroeconomics, as applicants to masters for my bachelor profession were not gathered enough and I found macroeconomics to be very interesting way to improve my analytical skills. And then PhD in economics to combine and apply both my math technical and analytical skills. In dissertation I have applied a variety of models, math solutions and methods. Much of the models were evaluated by econometric tools such Stata, Eviews. In addition, an online platform was developed by me for monitoring the quality of the countries" economic output. It provides an opportunity to study the list of observed countries, their results and ratings, strengths and weaknesses from the perspective of the economic output quality, download the dynamic series of indices and their components. The tool supports dynamic data, that is, it is possible to recalculate the indices after new data is published – just upload them and observe the new results. It is also possible to modify the list of components of the index, their weights, percentiles and normalization limits. Thus, without basic methodological and chronological limitations, the observation of the EOQI is automated. Moreover, having the methodological framework of the simulation model of the EOQI and the functional interactions derived from it, one can carry out relevant simulations and observe the behaviour of the system. Due to the

presented simulation model integrated in the platform, various policies aimed at improving the country's quality of economic output can be developed and virtually applied. To me, the use of such tools should be a permanent part of the policy development process, saving time, personnel, financial and other resources. Over the 9 years of undergraduate and postgraduate degrees I participated in different research groups and authored tens of academic articles.

4. **What did you achieve at university that you consider exceptional?**

   * Academic experience – working with my lecturers in different research groups

   * Lecturing experience – working with students in another role, organizing lectures, seminars, group works, etc.

   * Candidate of Economic Sciences

Context

1. **Outline your thoughts on the mission of Canonical. What is it about the company's purpose and goals which is most appealing to you? What is risky or unappealing? Are there any elements of the company goals that you are unsure about?**

   The canonical mission completely corresponds to my current goal. It's not only a goal, it's part of my lifestyle now. More than 2 years I'm really enjoying the whole process of open-source contribution, while I'm not only developing and providing a result which may be useful for people, but also enlarging my skillset in different aspects of software development. Have published npm packages, a chrome extension and a few websites. All of the goals of the company are not contradicting to mines, but most appealing ones to me I find the social impact and innovation & quality, because I wish to have a direct impact on the process of making a world a better place, especially in the frame of my profession. Having an opportunity to make that wish to become true with Canonical will be the best starting point for me.

2. **What would you most want to change about Canonical?**

   I find marketing is very important in open-source: due to it wider range of social

groups can get acquainted with such companies as Canonical and get involved in open-source contribution.

3. **What gets you most excited about this role?**

   From my perspective, my current lifestyle and goals appeal to the ones the company has defined for itself, which is the most important point when looking for a job. On the other hand, such circumstances are the best to realize my potential in software engineering and make a difference. Being in an environment where I can continuously grow while contributing value is very motivating to me.