Surasak Kaewpho

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Portfolio website

Summary

I focus on next.js to develop the web application. I graduated in physics from Kasetsart University. Now, I am a research assistant in the laboratory of optical metrology. In the computer field, I have a basic skill in web development (html css javascript node.js, and react.js). I focus on the next.js and typescript to develop the progressive web application, using tailwindcss for styling the web front. I can develop restApi, connect and manage the data in the database (MongoDB), and do web scraping by node.js and python. I have a strong logic for programming and a basic knowledge of computer architecture. Python, I use it to process images, data analysis, numerical simulation in physical science and create the api for control the machine in back-end process too.

Hard skills

Basic HTML, CSS, JavaScript, TypeScript, Fortran, Node.js, React.js, Next.js, Tailwindcss, MongoDB
Intermediate Python, Wolfram

Tools

Virtual studio code (vscode), Postman, Windows/MacOS, Git/GitHub

Web development languages

I use html css and javascript to build a simple website, responsive website, fetch the API and present the data. I focus on react framework (next.js) with typescript to build the complex website or complex web application and use the tailwindcss for styling. I develop the restApi by node.js (express.js) and python (FastApi).

Job experiences

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- Use Next.js for develop the GUI and develop the APIs for control the machine by python.
- Use Python to simulate the physical phenomena of the diffraction image by reflection from the reflector.
- Use Python to simulate the ray tracing in 3D to study the behavior of the image by diffusion and reflection and derive the formula for measuring the height of the surface.
- Use Python to simulate the distorted image by the real dimension of the optical lens.
- Manage the storage in Raspberry Pi by auto-transferring the file to the server.
- Data virtualization for presenting the measurement result.
- Optimize the program for using less memory of RAM and parallel processing to simulate the diffraction image intensity in the physical wave.
- Reverse engineer of the algorithm for measuring the angle by image processing.
- Design and set up the laboratory scale of the surface profiler to measure the height profile of a small semiconductor.
- Design and build the prototype of a high-resolution autocollimator (small angle measurement tool).
- Calculate the configuration value for designing the high-resolution profiler.
- Analyze the variation from the optical element to estimate the uncertainty of measurement.
- Design a mathematical model for measuring the height profile in 3D.
- Estimate the uncertainty of measurement with the Monte Carlo method.
- Derive the mathematical model for simulating the diffraction image by many surfaces.

Others

I can learn by myself in new technology, physics, mathematics, and computer science. I have ever been an IT support assistant in high school for 4 years, fixing, repairing, installing accessary software, and reinstalling the OS on PCs.