

Ir. Rick van Dijk

Profile

I am a young, enthusiastic developer, with great interest in the digital transformation in the Built Environment. Being educated as an engineer, and with a deep passion for development, I want to contribute to this progress. I have experience with languages such as C#, Python and Grasshopper and am eager to develop my skills further. I am enthusiastic, efficient, and interested in new techniques, especially across disciplines.

Personal information

Rick van Dijk

11-06-1996

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[Rickvandijk1.github.io/PortFolio](https://rickvandijk1.github.io/PortFolio)

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Work experience

AEC Developer (C#) & Engineer, Pieters Bouwtechniek, Delft

September 2020 – present

After my studies I started at Pieters Bouwtechniek, as Engineer, trying to find what I suited me. After I designed and calculated on several large projects, I learned the ins and outs of processes within the company. I realized a lot of processes in the company were old-fashioned and inefficient, so I joined the Developer team in Amsterdam. There we write software to optimize processes, mostly focused on designer-processes. This further increased my knowledge in the Revit API, writing add-ins in C# and using WinForms, and learning to work in a team with Azure DevOps. Examples of work I did are; translating large data to readable Excel formats, automating dimensions and setting up sheets, checking whether a model conforms to Pieters standards, and automating reinforcements. I also wrote a program that loads 3DBAG data into our projects and worked on the integration of Speckle. Especially while working on automating engineering problems, my engineering background proved very useful. I also assisted two students in their graduation projects, as they were researching parametrizing balconies and automated (3D) reinforcements.

Education

Master Building Technology (Cum Laude), TU Delft

2018–2020

During my Master, in Building Technology, my interest lay heavily in the field of Computational Design and Structural Engineering. Wherever possible I chose to push the limits and was known as a Python and Grasshopper guru. Examples of work I did were structural optimizations using GrassHopper for masonry architecture, optimizing material (in structural and acoustic properties) in a wooden bench and generating toolpaths for the CNC machine and together with a team I used RoboDK to make a dome out of hemp. This is hard (and boring) to explain in text, so feel free to check out my [portfolio](#)!

In my Thesis, I stepped even further out of the box by implementing Computer Science and Mechanical Engineering in the generative design of (masonry) Architecture. Translating Topology Optimization to architectural models and generating meaningful geometry. I implemented self-weight, snow loads, and roofing constraints in 3D Topology Optimization, to generate geometry applicable to masonry buildings. This was done in pure Python, only using packages like NumPy. I'm still extremely enthusiastic about my work in this field and I'm always happy to show my work!

Bachelor Architecture, TU Delft

2014–2018

My bachelor's was finished in 2018, where I developed my main interests in Structural Engineering and Computational Design. In the main courses of my bachelor's, I loved structural interesting buildings the most. Looking for challenges I did electives in Computer Graphics, learning a lot about the math's behind e.g. 3D graphics and Raytracing. Writing our own game engine in C# and OpenGL caused this to still be a large personal interest of mine. Another elective I did was a minor in Integrated Infrastructure Design at the faculty of Civil Engineering. Here I focused on complex projects, where stations, bridges, and dikes were designed.

Hobbies

I'm a big fan of programming, even in my free time. Every year I complete the AdventOfCode puzzles, you can find me on a few forums about RevitAPI and Dynamo and a large hobby of mine is Game Development. I also love to learn about niche parts of math or how complex algorithms work. Next to that, I love to play music, cook and try my best in making my garden bee-friendly! Together, my wife and I love to be tourists, as well as in our own country, as in new places.