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## Case Study: Optimized Code for Neural Cell Simulations <sup>[1]</sup>

[Intel](#) <sup>[2]</sup>

[Newcastle University](#) <sup>[3]</sup>

### **Link:**

[Case Study: Optimized Code for Neural Cell Simulations](#) <sup>[4]</sup>

Monday, 4 January, 2016

Intel held the Intel® Modern Code Developer Challenge that had about 2,000 students from 130 universities in 19 countries registered to participate in the Challenge. They were provided access to Intel® Xeon® processors and Intel® Xeon Phi? coprocessors to optimize code used in a CERN openlab brain simulation research project. The goal of the research project is to find treatments and cures for neurological disorders, such as schizophrenia, epilepsy, and autism. The contestants task was to look at the code for cell clustering and 3D movement and then modify the algorithms for parallel performance by optimizing the code to reduce the runtime, all while maintaining correctness.

 [Case Study\\_ Optimized Code for Neural Cell Simulations \\_ Intel® Developer Zone.pdf](#) <sup>[5]</sup>

### **Phase:**

[openlab phase V](#) <sup>[6]</sup>

### **Technical area:**

[Computing Platforms \(offline\)](#) <sup>[7]</sup>

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**Links**

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[2] [http://test-static-05.web.cern.ch/about/industry\\_members/intel](http://test-static-05.web.cern.ch/about/industry_members/intel)

[3] [http://test-static-05.web.cern.ch/about/research\\_members/NewcastleUniversity](http://test-static-05.web.cern.ch/about/research_members/NewcastleUniversity)

[4] <http://software.intel.com/en-us/articles/case-study-optimized-code-for-neural-cell-simulations>

[5] [http://test-static-05.web.cern.ch/sites/test-static-](http://test-static-05.web.cern.ch/sites/test-static-05.web.cern.ch/files/spotlights/2016/Case%20Study_%20Optimized%20Code%20for%20Neural%20Cell%20Simula)

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[6] <http://test-static-05.web.cern.ch/about/phase-v>

[7] <http://test-static-05.web.cern.ch/technical-area/computing-platforms-offline>