

The **Biological Algorithms** group offers a

Student Assistant (SHK)

position. We are search for a student preferable of STEM subjects who assists us in

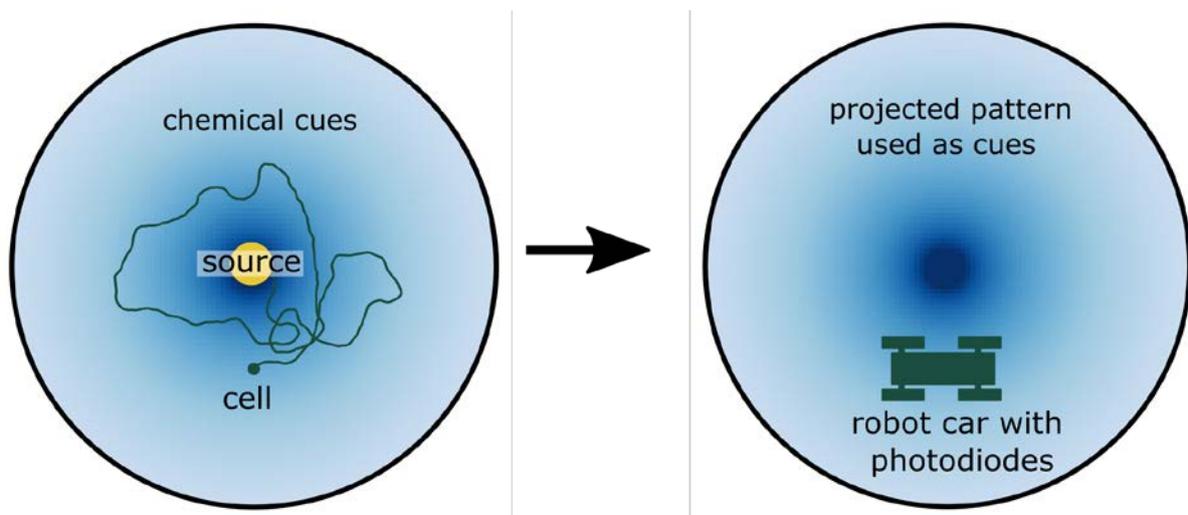
developing a robot demonstrating our navigation algorithm.

Biological cells and simple organisms navigate in spatial fields of diffusing chemical cues, termed chemotaxis. For the length scales of cells, the sensing and motility noise is large which renders this chemotaxis a non-trivial problem.

In our group we developed an optimal algorithm for chemotaxis navigation. In addition to our numerical simulation, we are developing a robotic car in order to demonstrate the robustness and real-world application of our navigation algorithm. Instead of chemical cues our robot car uses photonic cues, i.e., light to navigate.

Currently we are developing the robot car as well as the experimental setup. The robot is based around a Raspberry Pi computer and the project will be developed in python. Consequently, basic knowledge of robotics, Python and Linux is beneficial.

We hope you are interested in this project and motivated to join our group. Feel free to contact us for further information and details.



Biological Algorithms Group. Our mission is to identify simple paradigms of robust motility control and pattern formation in complex biological systems. We reverse-engineer these biological algorithms in close collaboration with experimental biologists, using tools from physics, information theory, and engineering. <https://physics-of-life.tu-dresden.de/en/research/core-groups/friedrich>

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