Undergraduate Research Projects at Terauchi Laboratory

Research Area : Programming Languages

- **Research Topics**

    ▶ Research on advanced PL features : E.g., dependent refinement types and algebraic effects

    ▶ Program verification : Verifying the correctness of programs by static code analysis

    ▶ Program synthesis : Automatic synthesis of program code. E.g., for bug repairs.

    ▶ Automated deduction : Methods for automatic theorem proving. E.g., SAT/SMT/CHC solvers.

    ▶ Applications to Security : E.g., automatic detection and repair of security vulnerabilities

- **Research Project Options**

    I.   Acquisition of background knowledge through studying textbooks and survey papers.

    – E.g., a textbook about type systems or a survey paper about automated deduction.

    II. Project tasks related to research projects at the laboratory

    – E.g., develop (a part of) an automatic theorem prover or a type system for algebraic effects.

Please do not hesitate to ask questions.
(You may start with background studies even for option II.)
Please email terauchi@waseda.jp.