

Osteotomy_web

Osteotomy_calc is a veterinary surgeon OP planning tool, written in Python by Uwe Schweinsberg.

The web-version of Osteotomy_web is embedded in the Flask web framework and forked from [microblog](#).

A detailed documentations explains OP-Planning with Blender. Planning templates of examples are provided for download. A forum can be used for exchange of ideas and suggestions.

License

The program code and documentation is licensed under GNU GENERAL PUBLIC LICENSE Version 3.

Deployment

The source code is already accessible via a [github repository](#).

After release of the Pumuckel case report , by Lorenz Schweinsberg, the site shall be deployed on a debian server.

NGINX is used as HTTP server, reverse proxy and IMAP/POP3 proxy server.

The application is deployed with Gunicorn, a Python WSGI HTTP Server for UNIX.

Password protected test versions of the [Osteotomy](#) and the [Documentation](#) website are already online.

The web framework Flask

[Project Homepage](#). Tutorials used: [Flask Web Development](#) by Miguel Grinberg (O'Reilly) and the [Flask Mega-Tutorial](#).


Flask is written in Python and licensed under BSD License

Structure of Osteotomy_web

OP Planning x +

← → ↻ 🏠 https://osteotomy.de/op_planning 80% ... 🛡️ ☆

🌐 Erste Schritte 🦉 Getting Started ⚙️ Meistbesucht



Single Cut Rotational Osteotomy

CASE OP_PLANNING OP POST_OP ABOUT FORUM LOG IN

Input angles

Enter coronal component C

Enter sagittal component S

Enter torsion component T

Submit

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Calculation result



OP Calculation results

https://osteotomy.de/op_planning_

Erste Schritte Getting Started Meistbesucht

Single Cut Rotational Osteotomy

CASE OP_PLANNING OP POST_OP ABOUT FORUM LOG IN

Input Values

coronal component C = 27.1 degrees
sagittal component S = -8.2 degrees
torsion_component T = 29.7 degrees

Transformation of degrees in radians

coronal component C = 0.4730 rad
sagittal component S = -0.1431 rad
torsion_component T = 0.5184 rad

Calculation

according to Sangeorzan, Judd (1989)

true angular deformity (15)

$A = 28.0$ degrees (0.4886 rad)

orientation angle (16)

$\alpha = -15.7$ degrees (-0.2745 rad)

azimuth of vektor k (angle between z1 axis and the axis of rotation of vector k) (13)

$\Phi = 30.6$ degrees (0.5337 rad)

rotation between x1 axis and the projection of k onto the x1-y1 plane (12)

$\Theta = 44.2$ degrees (0.7716 rad)

rotation around k (14)

$\beta = 40.6$ degrees (0.7086 rad)

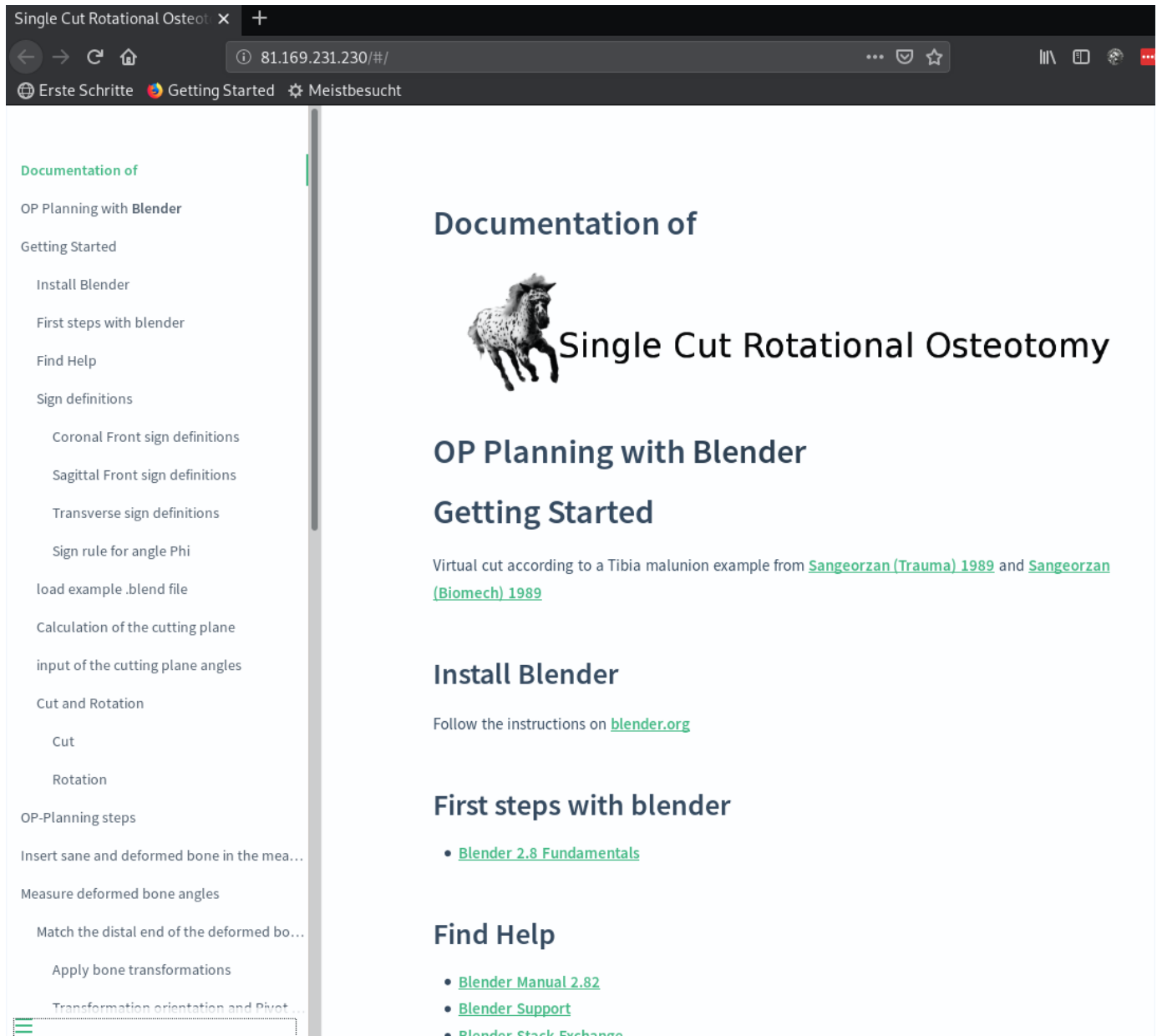
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Documentation of OP-Planning with [Blender](#)

The documentation is rendered with [docsify](#).



[Blender](#) is a 3D creation suite. It is used for angle measurement of 3D bone models and virtual OP procedures.

Authentication and security

- Flask-Login: Management of user sessions for logged-in users
- Werkzeug: Password hashing and verification

- itsdangerous: Cryptographically secure token generation and verification
- assignment of user roles according to permissions in a Flask-SQLAlchemy (MySQL) database.
- Forms are protected against CSRF with a form.hidden_tag() element and secret key.
- The secret key is stored in an environment variable.
- Secure https connection with valid certificate (test-version: Let's Encrypt)

Testing

- 35 test modules achieve a coverage of 62%.

ToDo

- Integration of the documentation into osteotomy_web.
- A cookie confirmation info still has to be implemented.