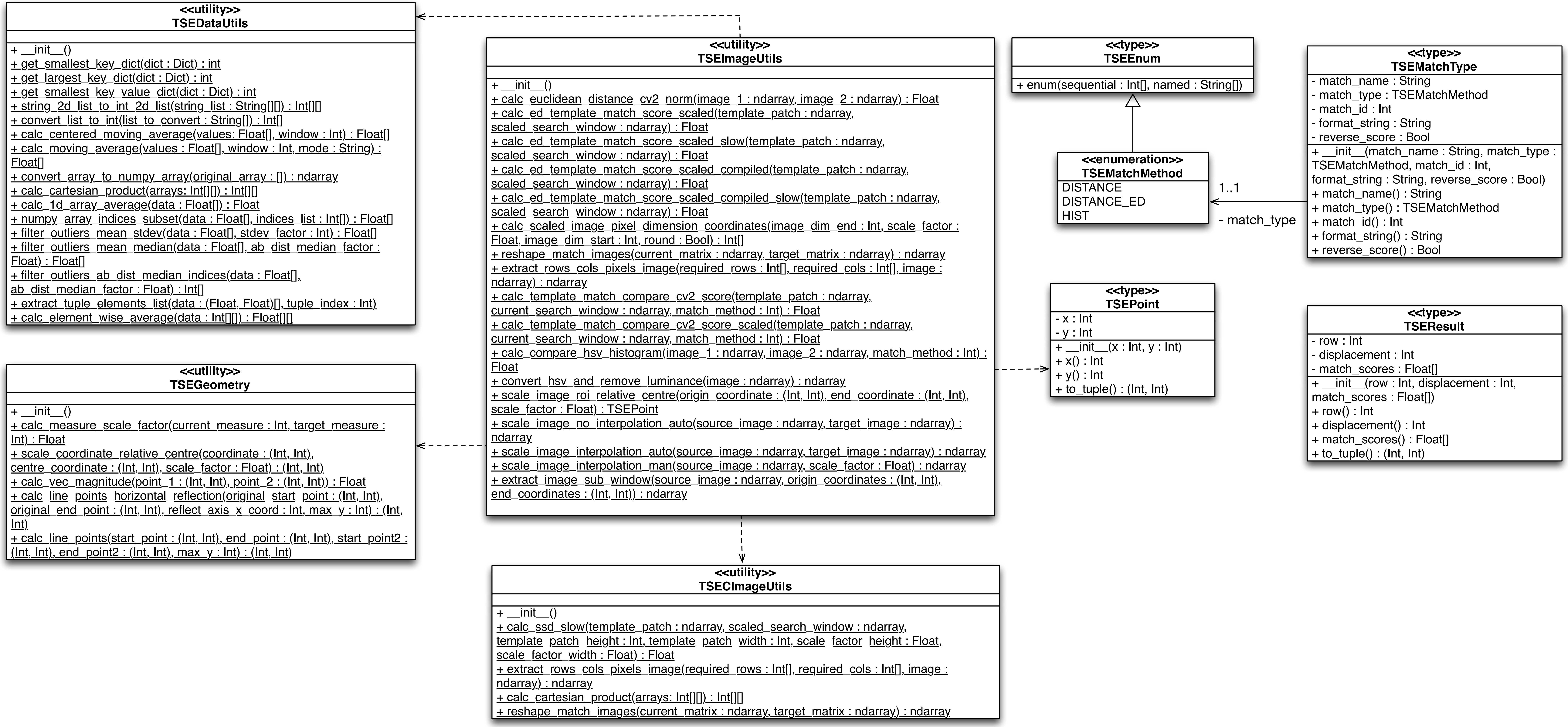

```
<<utility>>
TSEDataUtils
---
+ __init__()
+ get_smallest_key_dict(dict : Dict) : int
+ get_largest_key_dict(dict : Dict) : int
+ get_smallest_key_value_dict(dict : Dict) : int
+ string_2d_list_to_int_2d_list(string_list : String[][]) : Int[][]
+ convert_list_to_int(list_to_convert : String[]) : Int[]
+ calc_centered_moving_average(values: Float[], window : Int) : Float[]
+ calc_moving_average(values : Float[], window : Int, mode : String) :
Float[]
+ convert_array_to_numpy_array(original_array : []) : ndarray
+ calc_cartesian_product(arrays: Int[][]) : Int[][]
+ calc_1d_array_average(data : Float[]) : Float
+ numpy_array_indices_subset(data : Float[], indices_list : Int[]) : Float[]
+ filter_outliers_mean_stdev(data : Float[], stdev_factor : Int) : Float[]
+ filter_outliers_mean_median(data : Float[], ab_dist_median_factor :
Float) : Float[]
+ filter_outliers_ab_dist_median_indices(data : Float[],
ab_dist_median_factor : Float) : Int[]
+ extract_tuple_elements_list(data : (Float, Float)[], tuple_index : Int)
+ calc_element_wise_average(data : Int[][]) : Float[][]
```

```
<<utility>>
TSEGeometry
---
+ __init__()
+ calc_measure_scale_factor(current_measure : Int, target_measure :
Int) : Float
+ scale_coordinate_relative_centre(coordinate : (Int, Int),
centre_coordinate : (Int, Int), scale_factor : Float) : (Int, Int)
+ calc_vec_magnitude(point_1 : (Int, Int), point_2 : (Int, Int)) : Float
+ calc_line_points_horizontal_reflection(original_start_point : (Int, Int),
original_end_point : (Int, Int), reflect_axis_x_coord : Int, max_y : Int) : (Int,
Int)
+ calc_line_points(start_point : (Int, Int), end_point : (Int, Int), start_point2 :
(Int, Int), end_point2 : (Int, Int), max_y : Int) : (Int, Int)
```

```
<<utility>>
TSEImageUtils
---
+ __init__()
+ calc_euclidean_distance_cv2_norm(image_1 : ndarray, image_2 : ndarray) : Float
+ calc_ed_template_match_score_scaled(template_patch : ndarray,
scaled_search_window : ndarray) : Float
+ calc_ed_template_match_score_scaled_slow(template_patch : ndarray,
scaled_search_window : ndarray) : Float
+ calc_ed_template_match_score_scaled_compiled(template_patch : ndarray,
scaled_search_window : ndarray) : Float
+ calc_ed_template_match_score_scaled_compiled_slow(template_patch : ndarray,
scaled_search_window : ndarray) : Float
+ calc_scaled_image_pixel_dimension_coordinates(image_dim_end : Int, scale_factor :
Float, image_dim_start : Int, round : Bool) : Int[]
+ reshape_match_images(current_matrix : ndarray, target_matrix : ndarray) : ndarray
+ extract_rows_cols_pixels_image(required_rows : Int[], required_cols : Int[], image :
ndarray) : ndarray
+ calc_template_match_compare_cv2_score(template_patch : ndarray,
current_search_window : ndarray, match_method : Int) : Float
+ calc_template_match_compare_cv2_score_scaled(template_patch : ndarray,
current_search_window : ndarray, match_method : Int) : Float
+ calc_compare_hsv_histogram(image_1 : ndarray, image_2 : ndarray, match_method : Int) :
Float
+ convert_hsv_and_remove_luminance(image : ndarray) : ndarray
+ scale_image_roi_relative_centre(origin_coordinate : (Int, Int), end_coordinate : (Int, Int),
scale_factor : Float) : TSEPoint
+ scale_image_no_interpolation_auto(source_image : ndarray, target_image : ndarray) :
ndarray
+ scale_image_interpolation_auto(source_image : ndarray, target_image : ndarray) : ndarray
+ scale_image_interpolation_man(source_image : ndarray, scale_factor : Float) : ndarray
+ extract_image_sub_window(source_image : ndarray, origin_coordinates : (Int, Int),
end_coordinates : (Int, Int)) : ndarray
```

```
<<utility>>
TSECImageUtils
---
+ __init__()
+ calc_ssd_slow(template_patch : ndarray, scaled_search_window : ndarray,
template_patch_height : Int, template_patch_width : Int, scale_factor_height : Float,
scale_factor_width : Float) : Float
+ extract_rows_cols_pixels_image(required_rows : Int[], required_cols : Int[], image :
ndarray) : ndarray
+ calc_cartesian_product(arrays: Int[][]) : Int[][]
+ reshape_match_images(current_matrix : ndarray, target_matrix : ndarray) : ndarray
```

```
<<type>>
TSEEnum
---
+ enum(sequential : Int[], named : String[])
```

```
<<enumeration>>
TSEMatchMethod
---
DISTANCE
DISTANCE_ED
HIST
```

```
<<type>>
TSEMatchType
---
- match_name : String
- match_type : TSEMatchMethod
- match_id : Int
- format_string : String
- reverse_score : Bool
---
+ __init__(match_name : String, match_type :
TSEMatchMethod, match_id : Int,
format_string : String, reverse_score : Bool)
+ match_name() : String
+ match_type() : TSEMatchMethod
+ match_id() : Int
+ format_string() : String
+ reverse_score() : Bool
```

```
<<type>>
TSEPoint
---
- x : Int
- y : Int
---
+ __init__(x : Int, y : Int)
+ x() : Int
+ y() : Int
+ to_tuple() : (Int, Int)
```

```
<<type>>
TSEResult
---
- row : Int
- displacement : Int
- match_scores : Float[]
---
+ __init__(row : Int, displacement : Int,
match_scores : Float[])
+ row() : Int
+ displacement() : Int
+ match_scores() : Float[]
+ to_tuple() : (Int, Int)
```